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Prepared by the Budget Analyst
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CITY AND COUNTY OF SAN FRANCISCO

BOARD OF SUPERVISORS

BUDGET ANALYST

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April 18, 1997

Honorable Tom Ammiano
and Members of the Board or Supervisors
City and County of San Francisco
401 Van Ness, Room 308
San Francisco, California 94102

Dear Supervisor Ammiano and Members of the Board of Supervisors:

Pursuant to your request, transmitted herewith is our Management Audit Report of the Medical Examiner's Office of the City and County of San Francisco. This audit was conducted in accordance with generally accepted auditing standards established by the Comptroller General of the United States, as detailed in the United States General Accounting Office publication, *Government Auditing Standards 1994 Revision*.

While conducting this management audit, the Budget Analyst consulted with numerous professionals in the field of forensic medicine and toxicology, and with individuals well-versed in regulations governing safety practices in clinical, laboratory and medical settings. These experts included:

- The pathologists of the San Francisco Medical Examiner's Office;
- Pathologists from other jurisdictions across the United States, specifically King County, Washington; Cook County, Illinois; Bexar County, Texas; Hennepin County, Minnesota; and Milwaukee County, Wisconsin;
- Toxicologists from the Medical Examiner-Coroner facilities in the counties of Los Angeles and San Diego, as well as independent toxicologists in private practice and with the Institute of Forensic Science; and,

- Regulatory personnel with the California Department of Health Services, the Center for Disease Control, the American Board of Pathology and the United States Department of Labor Occupational Safety and Health Administration.

The Budget Analyst's audit staff made observations of various aspects of the Medical Examiner's Office operations on at least twelve separate occasions. These observations were performed of the service floor (autopsy area), the laboratories (toxicology and histology), the administrative office area, and during ride-alongs with investigators. Additionally, the Budget Analyst's staff requested information from the Department of Public Health's (DPH) Environmental Health Management Division regarding the disposal of regulated and medical waste. This request for information resulted in an inquiry and inspection by the DPH Environmental Health Management Division and the disclosure that the Medical Examiner's Office was transporting biologically hazardous waste without appropriate permits. Our report notes that the Medical Examiner's Office is working with Environmental Health Management to remedy this situation.

In addition to our consultation with outside experts, consultations with professional staff within the Department, and our direct observations, we interviewed 33 managers and staff of the Medical Examiner's Office. Some of the interviewed staff expressed concern that their comments remain confidential and not be shared with management because of fear of retribution. Accordingly, at the request of these individuals, the Budget Analyst conducted some interviews with employees in the presence of witnesses and conducted other interviews with employees in neutral locations outside of normal business hours.

Since transmitting the draft report, the Budget Analyst has received letters from some of these staff recanting information provided in the original interviews. Although we recognize the difficulties these staff may have with the results of our review and analysis, and acknowledge their right to amend statements, in all cases the findings contained in our final report are based on independent observations and analysis, as well as the information obtained during the initial interviews.

Our report contains nine findings and 43 recommendations which identify opportunities to increase the efficiency and effectiveness of the Medical Examiner's operations. If properly implemented, our recommendations would generate $478,860 in annual savings, net of identifiable costs.

REF 353.6097 M311

Management audit of the
Medical Examiner's
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Major Accomplishments

The Budget Analyst found through interviews with other medical examiner and coroner offices in California and selected jurisdictions across the United States, that the current Chief Medical Examiner is very well respected in the forensic pathology community, and is certified by a majority of the western states and western Canada as a forensic expert. The recognition which the Chief Medical Examiner receives as an expert is of great value to the City and County of San Francisco, and has been a key factor in generating the City's reputation for providing the highest quality forensic services.

In addition, we found that the Medical Examiner's Office staff is an extremely dedicated group of individuals who are committed to providing high quality and compassionate service to the citizens of San Francisco. We wish to recognize that this group of employees face extremely difficult challenges each work day, interacting with the public during very stressful and emotional times. These staff are clearly concerned that any contact with the public be as humane as possible, and that information provided to these citizens be accurate, helpful and afford some degree of solace.

The Budget Analyst's staff also found the Medical Examiner's Investigators to be an extremely professional group of individuals who must regularly perform their duties during very intense and stressful situations. There are reported incidents of citizens who were not pleased with the outcome of their interaction with the Medical Examiner's Office, and Investigators in particular. Upon reviewing and investigating incidents that were brought to our attention, we believe that the Investigators responded appropriately, and acted in accordance with established laws of the State of California and existing policies and procedures of the Department.

The Medical Examiner's Office has been a leader in Sudden Infant Death Syndrome (SIDS) research since the 1970s. The Chief Medical Examiner is one of the authors of what has become the standard for the SIDS Investigation and Autopsy protocols for the State. His participation in the "Back to Sleep" program and recognition as a leader in efforts to reduce the number of deaths due to SIDS is commendable. During Fiscal Year 1994-95, there were only six SIDS cases in San Francisco. This was a substantial decrease from the 15 cases in the previous fiscal year. By working in conjunction with the State and the DPH, the Chief Medical Examiner is personally committed to isolating the causes of SIDS and making SIDS a rare to nonexistent occurrence.

The Chief Medical Examiner serves as the Chair of the City's Child Death Committee. Although this committee is mandated by law, the City and the Medical Examiner conducted meetings prior to this mandate to review the deaths of all individuals under the age of eighteen. The Child Death Committee meets monthly to share information available on the deaths of children, the services available to the families and the resources needed by the community to address concerns surrounding the deaths of juveniles and surviving siblings and family members. The Committee also assesses the state of the Mayor's Rapid Intervention Program and its ability to respond to crises, and provides additional resources to schools and other groups needing such resources.

There are other significant recent accomplishments of the Medical Examiner's Office. These specific accomplishments have been enumerated in the Introduction Section of this report.

After completing our fieldwork and preparing the draft report, we held an exit conference with the Administrative Services Director, senior management of the Office of the Medical Examiner and a representative of the City Attorney's Office. The Chief Medical Examiner provided a written response to this management audit report, transmitted through the Director of Administrative Services, which has been included as an attachment beginning on page 146. Where appropriate, we have commented on the Chief Medical Examiner's response in the body of this transmittal letter.

Broad Conclusions Regarding Medical Examiner Operations

Based on the results of this management audit, the Budget Analyst staff have drawn the following broad conclusions regarding the operations of the Medical Examiner's Office:

1. The Medical Examiner's Office is operating within the parameters that have been set by the California Government Code and the Charter of the City and County of San Francisco with regard to carrying out its forensic and public health responsibilities.

2. The Medical Examiner's Office has an excellent reputation in the State and across the United States for the forensic work it performs, and the Chief Medical Examiner is well respected as a Forensic Pathologist.

3. The current organizational structure of the Medical Examiner's Office illustrates an overly broad span of management control for the Chief Medical Examiner and Administrative Coroner as a result of the extensive duties,

activities and supervisory responsibilities taken on by these two individuals, and recent events related to staffing changes, vacancies and litigation. As a result, there is a general lack of supervision of line staff, and the Office has inadequate internal controls, unclear policies and procedures, and low employee morale.

4. Activities, such as the testing of employees for HIV, providing flu vaccines and other inoculations for employees, and the failure to adhere to Universal Precautions, a set of hygienic practices designed to reduce the spread of bloodborne and airborne pathogens in medical settings, has unnecessarily exposed employees to risk of infection and has exposed the City to legal actions. Continuing these activities could impact the City's exposure to adverse claims and legal actions in the future.

5. Recommendations issued in a 1991 report from the Office of the Chief Administrative Officer have not been implemented by the Medical Examiner's Office. As a result, the management, staffing and training problems cited in the 1991 report continue to exist.

6. Organizational and management changes are needed to increase the operational efficiency of the Medical Examiner's Office, provide adequate training and supervision of staff, create an effective administrative foundation and provide assurances that the City and County's reputation for high quality forensic work will continue.

These conclusions are discussed in detail within the body of this report. Our detailed recommendations, included at the end of each finding, provide specific steps that the Medical Examiner's Office should take in order to improve the operational efficiency of the Office.

Our findings and recommendations are summarized below.

Section I: Testing of Employees for Communicable Diseases

In 1985, the State of California passed legislation requiring written consent prior to testing any person for the presence of Human Immunodeficiency Virus (HIV). The requirements of obtaining written consent prior to testing any individual for HIV are also contained in the San Francisco Municipal Code.

Two employees contend that in July 1994, the Chief Medical Examiner for the City and County of San Francisco tested them for HIV without their implied or written consent. The Medical Examiner' Office also provides testing for Tuberculosis,

Hepatitis B, and, as a benefit for Medical Examiner's Office employees, will administer Tetanus Booster shots, Hepatitis B vaccinations and flu shots.

As a result of the Medical Examiner's Office's failure to have its employees sign written consents prior to HIV screening, two employees tested in July of 1994 have filed charges with the Equal Employment Opportunity Commission against the City and County of San Francisco. One of these claims is still pending.

In order to comply with State regulations and minimize the City's risk of exposure, the Medical Examiner's Office should:

I.1 Review and consistently enforce policies and procedures for testing employees for HIV, which include:

a) Reviewing and consistently using forms for employees to complete and sign, granting the Medical Examiner's Office permission to conduct the requested HIV test, and requiring the person administering the test to certify receipt of the form containing the employee's signature consenting to the procedure;

b) Requiring the physician to have physical possession of the completed and signed consent form from the individual to be tested prior to drawing a blood sample; and,

c) Establishing a secure file to house the consent forms of individuals who are tested and maintain the completed and signed documents for a period of no less than three years as required by State law.

I.2 Establish a protocol and form which segregates samples submitted for HIV screening for living and deceased subjects and work with the Department of Public Health to obtain the appropriate authorization to submit blood samples for HIV screening that are not part of any State or Federally funded AIDS surveillance projects.

I.3 Enforce the established informed consent protocol to be administered to all employees who are either tested for or receive vaccinations for Hepatitis B.

I.4 Enforce the established informed consent protocol to be used when administering flu and all other vaccines to employees in order to reduce the City's risk of exposure to legal actions or other claims due to adverse reactions to such vaccines.

As a result of the Medical Examiner's Office practices with regard to HIV testing for employees, two claims have been filed against the City and County of San Francisco by individuals alleging they were tested involuntarily for HIV in July of 1994. As of the writing of this report, the Medical Examiner's Office reports that one law suit was filed, but has been dismissed in favor of the City. The other action, an Equal Employment Opportunity claim, is pending. Consequently, no monetary damages have been paid by the City with regard to these matters. Based on discussions with the City Attorney's Office, implementing the recommendations noted in this section would significantly reduce the City's future risk of exposure from allegations of improper testing.

Additionally, the City's exposure to risk resulting from adverse reactions to vaccines administered by the Medical Examiner's Office would also be reduced significantly by implementing bona fide informed consent protocols. These recommendations would require a change in procedure and the implementation of testing and vaccination policies. However, all of the recommendations could be implemented at no cost to the City.

In the response to Section I of the audit report, the Chief Medical Examiner states:

- "No Medical Examiner's Office employee has ever been required, at any time, to submit to any medical procedure at the behest of the Medical Examiner's office, either on-site or elsewhere." and,

- "The OSHA Bloodborne Pathogen Standard requires the Office to 'make [hepatitis B] vaccination available at no cost and at a reasonable time and place, to all employees who have potential exposure.:"

The Budget Analyst's report clearly states:

- Members of the Medical Examiner's Office staff acknowledge that employees have been tested for the presence of HIV antibodies and that two of those employees contend that such testing was involuntary.

- "Federal regulations require that all employees exposed to Hepatitis B receive testing, upon request and that the vaccine be available to them in order to prevent inoculation. In order to comply with this requirement, the Medical Examiner's Office offers Hepatitis testing, and, vaccinations to employees;"

The Chief Medical Examiner further comments on Section I by stating:

- "Your report correctly points out that the coroner's offices in most of the other jurisdictions your team surveyed do not offer such testing and vaccination; however, you fail to note that all, or nearly all of those other jurisdictions do not even have a medical examiner's office, but instead operate simply as a coroner's office. A county coroner is not a trained physician."

The Budget Analyst's audit team surveyed seven Medical Examiner's Offices, two Medical Examiner/Coroner's Offices, one Sheriff/Coroner's Office and one Coroner's Office. The jurisdictions surveyed are as follows:

- King County, Washington Medical Examiner's Office with six trained and licensed physicians;
- Cook County, Illinois Medical Examiner's Office with 13 trained and licensed physicians;
- Hennepin County, Minnesota Medical Examiner's Office with five trained and licensed physicians;
- Milwaukee County, Wisconsin Medical Examiner's Office with seven trained and licensed physicians;
- Bexar County, Texas Medical Examiner's Office with five trained and licensed physicians;
- San Diego County Medical Examiner's Office with five trained and licensed physicians;
- Santa Clara County Medical Examiner's Office with four trained and licensed physicians;
- Los Angeles County Medical Examiner/Coroner's Office with 18 trained and licensed physicians;
- Ventura County Medical Examiner/Coroner's Office with 2 trained and licensed physicians;
- Alameda County Sheriff/Coroner which contracts out autopsy services, but has one trained and licensed pathologist (medical doctor) on staff; and,
- Marin County Coroner which contracts out all services and has no licensed medical staff.

The Chief Medical Examiner's response suggests that our report recommends that all testing and vaccination should be terminated, and that such termination would be inconvenient for employees.

The Budget Analyst's report actually recommends that the Medical Examiner consistently enforce policies with regard to testing and vaccinations or, in the absence of enforcing policies, refer all employees to other health care facilities or professionals.

In his response to the audit report, the Chief Medical Examiner states that the information on the actions filed by the two employees who contend that they were involuntarily tested for HIV is a misrepresentation of the facts and that:

- The law suit was thrown out of court; and,

- The EEOC investigation has just begun.

The Budget Analyst states:

- The law suit has been dismissed in a summary judgment, in favor of the City; and,

- The Budget Analyst acknowledges that the second claim is pending and has documentation, with an EEOC case number, for the second claim dating back to March 8, 1995 .

Section II: Sanitary Conditions and the Use of Universal Precautions

To prevent the spread of infectious diseases transmitted via airborne and bloodborne pathogens, the Center for Disease Control (CDC) has developed universal precautions to be used in medical settings. Universal precautions are defined as a set of hygienic practices employed by healthcare workers that, when properly and consistently used, will reduce the risk of infection to patients and staff from bloodborne and airborne pathogens. Additionally, the Federal Department of Labor, Occupational Safety and Health Administration (OSHA) issued guidelines on precautions in Occupational Exposure to Bloodborne Pathogens; Final Rule on December 6, 1991.

Based on observations and interviews with pathologists, precautions are not generally observed in the autopsy areas of the Medical Examiner's Office. For example, disposable needles and syringes are reused; instruments are not appropriately cleaned, disinfected or sterilized; and protective masks, face shields and glasses are not worn during all procedures.

Failure to observe universal precautions unnecessarily exposes staff to the possibility of contracting infections from bloodborne and airborne pathogens. Additionally, the failure to properly clean, disinfect or sterilize instruments after each procedure increases the risk of contaminating specimen.

The Forensic Lab Manager is responsible for ensuring that all employees adhere to the Exposure Control Plan and that universal precautions are observed. However, the Forensic Lab Manager does not routinely observe procedures in the laboratories nor monitor autopsy procedures to ensure that the pathologists are following the guidelines set forth in the OSHA Rules and Exposure Control Plan. By their own admission, the pathologists do not always wear masks, do not always wear protective gowns and sleeve guards, and do not always use the recommended ten percent bleach solution for cleaning instruments. Additionally, laboratory work areas (both Toxicology and Pathology) were generally unclean.

Other concerns with regard to compliance with OSHA rules include individuals walking through the autopsy area with open beverage containers, individuals entering the autopsy area without the proper protective clothing, rinsing instruments in only water between cases, and no inspection of area or procedures to document the use or violation of universal precautions in laboratory and autopsy areas. Compliance with all applicable OSHA rules is important to decrease the risk

of infection from bloodborne pathogens (specifically HIV and Hepatitis B), and other pathogenic microorganisms.

In order to reduce the risk of employee exposure to bloodborne and airborne pathogens, the Medical Examiner's Office should devise a plan to conduct inspections of all work areas where exposure and contamination could occur to ensure that all employees are observing the OSHA regulations regarding protective equipment, clothing and procedures. The inspections also should include the monitoring of general housekeeping to ensure that the service floor and storage areas are sanitary, and to verify that all biologically hazardous waste is properly discarded and disposed of in a manner that is consistent with State regulations. Additionally, the Medical Examiner's Office should implement new policies with regard to the reuse of needles and syringes, and strictly enforce the OSHA regulation on the recapping of needles.

The Medical Examiner's Office should:

II.1 Enforce established protocols and generally adhere to the universal infection control and sanitary condition standards that are outlined in the Code of Federal Regulations publication announcing the OSHA rules.

II.2 Actively enforce the OSHA rules regarding the reuse of syringes and recapping of needles by:

(a) Instructing staff that the practice of storing needles in sponges is not in keeping with universal precautions;

(b) Developing a protocol for cleaning and disassembling reusable needles that does not require staff to touch the needle with their hands;

(c) Using disposable needles once and properly discarding such needles after that one use; and,

(d) Developing a protocol to recap reusable needles with a mechanical device or instructing staff on using a one-handed method for recapping reusable needles.

II.3 Comply with all State and Federal regulations regarding the disposal of regulated waste and develop a method of providing proof of such compliance. Proof could be obtained by:

(a) Implementing a spot inspection and observation program for the autopsy and laboratory areas of the Medical Examiner's Office to verify compliance with regulated waste disposal rules;

(b) Preparing a clearly written protocol that can be easily posted in the autopsy room, toxicology and pathology laboratories; and,

(c) Working with Environmental Health to obtain the required transport permits.

II.4 Revise the Housekeeping section of the Exposure Control Plan to include a specific schedule for cleaning all areas and equipment on the service floor of the Medical Examiner's Office and laboratories. The revisions should include:

(a) The days on which specific cleaning tasks are to occur and the frequency of the cleanings;

(b) The specific type of disinfectant that is to be used and the specific concentration of the disinfectant mixture;

(c) The steps to be used in cleaning and disinfecting each type of surface and equipment; and,

(d) The method for sanitizing and drying each type of surface and equipment.

II.5 Assign specific staff to supervise and ensure the cleaning of specific areas of the service floor and develop a schedule for inspecting the service floor, including laboratories, to verify compliance with universal infection control and sanitary conditions outlined in the OSHA Occupational Exposure to Bloodborne Pathogens: Final Rule dated December 6, 1991.

Adopting a policy to use disposable needles only once prior to discarding them could be implemented at an estimated annual cost of $9,950. Based on financial data obtained from the FY 1995-96 year-end reports, these expenditures could be absorbed within the existing budget.

By complying with the OSHA regulations and CDC guidelines for observing universal precautions, the City can reduce its risk of accidental infections caused by needle sticks and other forms of inoculation (e.g. touching contaminated surfaces, splatter from blood and other body fluids, etc.). Reducing the risk of accidental infection also reduces the potential for legal actions, which may be filed by employees who are accidentally inoculated with bloodborne pathogens and other pathogenic microorganisms found in their work place.

In response to Section II of the audit report, the Chief Medical Examiner states:

- The office has been inspected by knowledgeable inspectors from the National Association of Medical Examiners (NAME); and,

- The autopsy area was active during the Budget Analyst's inspection of the facility;

In conducting this audit the Budget Analyst:

- Utilized the expertise of many individuals to understand and evaluate the Medical Examiner's Office's adherence to universal precautions, and used the audit team member who had experience inspecting autopsy areas from previous audits in other jurisdictions inspect the autopsy area in the Medical Examiner's Office;

- The autopsy area was not active during the observation cited in the Medical Examiner's response. The audit team member conducting the inspection was never asked to sign any release or put on appropriate protective clothing to conduct the inspection, as should have been the case if the area was active. Additionally, on two separate occasions, audit staff was admonished by the Pathologists and the Administrative Coroner not to enter the autopsy area because the area was active and the members of the audit team were not appropriately attired;

- The request to re-inspect the autopsy area was not made until the Chief Medical Examiner and his staff became aware of the Budget Analyst's concerns and the Forensic Autopsy Technician staff had returned to full strength; and,

- The audit team conducted at least 12 separate observations of the Medical Examiner's facilities and equipment which included the autopsy area, toxicology laboratory, histology laboratory, and the administrative area, and various other areas during ride-alongs.

The Chief Medical Examiner states in his response that:

- He is in disagreement with the Budget Analyst on the difference between sterilization, disinfection and decontamination; and,

- Universal precautions and OSHA regulations are always followed.

The Budget Analyst used citations from the Code of Federal Regulations; Occupational Exposure to Bloodborne Pathogens; Final Rule December 1991, which states that facilities subject to the regulations set forth in this citation should clean, sterilize or disinfect, as appropriate all contaminated surfaces and instruments, and regulations regarding the availability and use of protective clothing and equipment.

As noted in the audit report the Budget Analyst found:

- The Medical Examiner's Office has complied with the letter of the regulations by developing an Exposure Control Plan which contains all of the required elements;

- Staff conducting procedures, by their own admission, do not always properly clean, disinfect or sterilize instruments and surfaces as appropriate;

- Staff, by their own admission, do not always wear the proper protective clothing and equipment; and,

- It is the responsibility of the Chief Medical Examiner to ensure that staff adhere to all universal precaution regulations, and that protocols are adapted to facilitate adherence.

The Chief Medical Examiner states that:

- The Budget Analyst has misunderstood the difference between unregulated waste and regulated waste.

The Budget Analyst's audit report states:

- There are discrepancies between staff's accounting of the disposal of waste and the Management's accounting of the disposal of waste;

- Prior inspections by CalOSHA resulted in citing the Department for failing to provide the proper disposal bags and/or labels in the Histology Laboratory, and during our tour of the Histology Laboratory, "red" bags were not present in any of the waste receptacles; and,

- The Budget Analyst's request for information from the Department of Public Health's Environmental Health Management Division, to clarify the waste disposal situation, resulted in a inquiry and inspection, and the disclosure that the Medical Examiner's Office's has transported biologically hazardous waste without the appropriate permits.

The Chief Medical Examiner states that:

- The Budget Analyst's concern over the re-use of disposable needles and syringes is unfounded and the practice is consistent with the industry standard;

- That the rules were not promulgated to protect the healthcare workers; and,

- Since his "patients" are dead, there is no danger of infecting them.

The Budget Analyst acknowledges that there is no danger of any of the Medical Examiner's patients contracting any type of infection. However, in discussions with the Center for Disease Control and in literature provided by the Center on nosocomial infections, the danger of infection extends to staff. The Budget Analyst also acknowledges that there is no OSHA regulation specifically on the re-use of 'disposable' needles. However, there are regulations on the re-use of needles. In this audit report, the Budget Analyst cites:

- The OSHA regulations regarding the proper treatment and handling of contaminated needles;
- The Center for Disease Control's cautions regarding the increased probability of a needle stick with the repeated cleaning and handling of needles;
- The storage of needles in sponges; and,
- A method of eliminating this concern that may cost $10,000.

The Medical Examiner states that:

- A cleaning protocol has existed since 1992;
- The protocol is followed by staff; and,
- Adherence is monitored by spot inspections.

The Budget Analyst found:

- A cleaning protocol that lacked the specificity needed to provide staff with detailed instructions on how cleaning should be carried out to meet the requirements of the OSHA regulations;
- Evidence during observations that the autopsy areas and laboratories are not regularly cleaned as outlined in the cleaning protocol; and,
- No reports or logs to substantiate the spot inspections and reports from staff that management's 'visits' to the service floor are for one to two minutes and are not inspections of the conditions of the facility.

Section III: Toxicology

The National Association of Medical Examiners, the Society of Forensic Toxicologists, and the American Academy of Forensic Sciences have established guidelines for the accreditation of forensic toxicology laboratories. These guidelines state that an accredited forensic toxicology laboratory should be directed by a chief toxicologist to: 1) provide overall management of the laboratory; 2) supervise laboratory staff; 3) validate new drug assays; and 4) maintain a quality assurance program.

The San Francisco Medical Examiner's Office currently does not have a lead forensic toxicologist who provides an appropriate level of supervision and day to day management of the Toxicology Laboratory, and has not had such a position since 1993. As such, the San Francisco Medical Examiner's Office does not fully conform to the guidelines established by the professional associations recognized for setting the standards used to accredit forensic toxicology laboratories.

The Office of the San Francisco Medical Examiner is performing almost five times as many tests per case as Santa Clara and Alameda counties, and almost three times as many tests per case as Los Angeles County. Increased testing requires additional staff and increases the costs of operations for Toxicology. According to the Medical Examiner's Office staff, and assessments from independent toxicologists, the disproportionately high number of tests is attributable to a lack of communication between the pathologists and the Assistant Forensic Toxicologists, and the lack of review of toxicological test requests and forms by a chief toxicologist or other qualified and authorized staff. A review process would provide a forum for the pathologists to discuss the case with the Forensic Toxicologist to determine the types of tests that should be conducted to obtain the required information and the most efficient method of conducting those tests.

The Chief Toxicologist in San Diego reported that the cost and time required to provide the analysis from comprehensive, or 'C' screens, warrants limiting their use. For example, at an average cost of $300 per 'C' screen, a same sample of 32 cases, conducted for this study, San Diego would have expended $1,800 to conduct the tests, Los Angeles would have expended $2,700 to conduct the tests, and San Francisco would have expended $7,800 to conduct the tests. Based on this analysis, it is costing the City three to four times as much to conduct the same type of toxicological testing as in other jurisdictions.

The staff of the Toxicology Laboratory has not been adequately cross trained. Consequently, the efficiency of the Laboratory is compromised. As reported by the Pathologists and other staff, laboratory technicians have been trained to perform a limited number of tests and to operate limited types of equipment. This insufficient cross training reportedly delays the processing of requests if the trained staff person is absent. Also, outdated procedures and the lack of comprehensive operating manuals for staff further impact the efficiency of the Laboratory. Finally, the chain-of-custody process is poorly coordinated with the case review process, and there is inadequate quality control and review of the analyses that are conducted.

The Medical Examiner's Office should:

III.1 Reinstate the position of Forensic Toxicologist to perform the technical duties of :

(a) Conducting the more complex, toxicological studies for forensically significant drugs on blood, urine, and other physiological specimens from both decedents and individuals suspected of violating the law;

(b) Using gas and thin layer chromatography, and ultraviolet and visible fluorescent spectrophometry;

(c) Conducting various toxicological procedures as needed; and,

(d) Providing supervision of the laboratory staff, and operating a quality assurance program which evaluates data, evaluates the accuracy of the work produced, and ensures the technical proficiency of the laboratory and staff.

III.2 Update and revise the toxicology test request form to improve the efficiency of toxicological analyses.

III.3 Evaluate the existing staff with regard to training needed to ensure that each staff member has the requisite skills to conduct all tests performed in the laboratory and that each staff member is able to operate all of the laboratory equipment.

III.4 The recommended Forensic Laboratory Manager/Forensic Toxicologist should develop and implement a training program within 90 days of assuming his/her position, that will provide the Toxicology Laboratory staff with:

(a) The background and knowledge of the required chemical procedures used for the tests conducted in the laboratory;

(b) Background and training on the specific tests used to conduct all toxicological analyses; and,

(c) An understanding of the operation of all laboratory equipment used to conduct toxicological analyses.

III.5 Upon completion of the training, the workload should be redistributed in a more equitable manner and a thorough analysis of the actual staffing requirements should be conducted under the direction of the Director of Administrative Services. This staffing analysis should be based on actual and projected workload and performance data that includes both quantitative and qualitative criteria that is used and accepted by professional forensic toxicology organizations, such as the Society of Forensic Toxicologists and the American Academy of Forensic Sciences.

III.6 Upon completion of the staffing and workload analysis, the Chief Medical Examiner should prepare a report for the Director of Administrative Services that includes supporting evidence to justify the retention of 5.5 FTEs to manage the workload in the Toxicology Laboratory or, based on the same information available for this report, recommends a reduction in the number of Assistant Forensic Toxicologists.

III.7 Develop a quality assurance program that meets the standards established by the Society of Forensic Toxicologists/American Academy of Forensic Sciences guidelines and includes the verification of standards, calibrators and controls by outside laboratories.

III.8 Conduct a critical, in-house review of the operations and processes used in the Toxicology Laboratory in order to:

(a) Evaluate the current state of the operations to determine the extent of deficiencies;

(b) Provide a detailed analysis with specific steps that should be taken to remedy any deficiencies;

(c) Assist in the preparation of operating and procedures manuals for the various analyses conducted in the laboratory and for the operation of various laboratory equipment;

(d) Provide guidance in developing a quality assurance program that includes adequate case review that is tied to the chain-of-custody process; and,

(e) Provide ongoing support for the verification of standards, calibrators and controls that are prepared for the various analyses.

Reinstatement of the Forensic Toxicology position could be accomplished at a net cost of approximately $17,834 in salary and associated fringe benefits ($85,289 Forensic Toxicologist Salary and Fringes, less $67,455 Forensic Lab Manager Salary and Fringe Benefits), and no increase in FTEs. This position could be funded with savings obtained through the reorganization of staffing in the Medical Examiner's Office (see Section VI: Staffing and Organization), which combines the function of the Forensic Laboratory Manager and the Forensic Toxicologist.

Should allocating the total workload in a more equitable manner and cross-training staff create greater efficiencies, allowing the Medical Examiner's Office to reduce the number of Assistant Forensic Toxicologist I positions, approximately $69,135 in annual savings would be generated for each eliminated position. Currently, all of the Assistant Forensic Toxicologist Positions are filled. Accordingly, the elimination of these positions and potential savings would have to be generated through attrition.

In response to Section III of the audit report, the Chief Medical Examiner states:

- The entire Medical Examiner's Office is accredited by the National Association of Medical Examiner's (NAME);
- The Chief Medical Examiner and his staff believe that they are in compliance with all guidelines set forth by NAME; and,
- By law, forensic laboratories are exempt from regulation with the sole exception of forensic alcohol analysis.

In our report, the Budget Analyst acknowledges the accreditation of the Medical Examiner's Office facility by the National Association of Medical Examiners (NAME). However, based on the guidelines for the accreditation of toxicology laboratories as set forth by the Society of Forensic Toxicologists and the American Academy of Forensic Sciences, there are deficiencies in the operation of the Medical Examiner's Office Toxicology Laboratory.

- In the exit conference, the Chief Medical Examiner stated that the facility could lose its NAME accreditation if it had 15 infractions on the order of not having a person to provide the type of management and oversight in the Toxicology Laboratory that is cited in the previous bullet; and,
- The Laboratory Manager does not provide any management of staff, does not inspect the autopsy area, which is part of Medical Services, for safety compliance, does not have any records to show that any inspections have occurred to enforce universal precautions, and only visits the Toxicology Laboratory one hour per week to re-order supplies.

The Budget Analyst simply notes that the current incumbent of the Laboratory Manager position holds a Ph.D. in pharmacology and could be better utilized to provide real hands-on management of the Toxicology Laboratory, and provide the types of services the Chief Medical Examiner enumerates in his response which are the preparation of protocols for improved methodology and training and court appearances.

The Chief Medical Examiner states that he:

- Disagrees with the Budget Analyst' recommendations regarding workload distribution;
- Has initiated cross-training for all personnel in equipment and procedures; and,
- Spends a minimum of 10 to 20 hours per week in the Toxicology Laboratory overseeing its operations.

In the audit report the Budget Analyst states:

- The analysis of workload distribution and staffing requirements was based on observations and information obtained from Toxicology Laboratory staff during interviews;

- Recommends a formal cross-training program that includes systematic training on procedures and tests staff competency in conducting procedures so that each member of the staff is certified and competent in all aspects of the work to be performed. The training program should include dated documentation on who led, who attended, and who successfully completed the training session. This is more formal and verifiable than the current program of rotating staff to unfamiliar equipment and tests once each month and instructing them to ask for help if they have any questions; and,

- Acknowledges that including nights and weekends, the Chief Medical Examiner spends more than five hours per week in the Toxicology Laboratory. However, during our observations of the Laboratory on three days from 8:00 AM to 4:00 PM, the Chief Medical Examiner did not provide any supervision in the Laboratory and staff clearly indicated that five hours per week was the amount of supervision they received. Our reports notes that the time spent on nights and weekends does not provide opportunities for supervision and oversight of staff's work.

The Chief Medical Examiner states that it is not true the chain of possession procedures have been compromised. He states specifically:

- Chain of Custody procedures are constantly reviewed;

- Such procedures have withstood the scrutiny of civil and criminal trials for over 25 years; and,

- Chain of possession typically begins prior to evidence being under the Medical Examiner's jurisdiction.

As discussed during the exit conference, the Budget Analyst's report states:

- The Society of Forensic Toxicologists and the American Academy of Forensic Sciences guidelines state that the chain of custody should be properly linked to a case review process; and,

- In the Medical Examiner's Office Toxicology Laboratory, the chain of custody is poorly linked to case review and the case review process is inadequate.

The Budget Analyst has differentiated between quality assurance and quality control. We note that with the exception of the alcohol analysis, there is no quality assurance; and that quality control is not adequate as the individual conducting the initial test may also be the individual who runs the quality control on said test. To have adequate quality control there should be separation between the two functions. The only retesting conducted by outside laboratories is in a litigious situation. A bona fide quality assurance program would entail routine confirmation by outside

laboratories as a matter of practice as opposed to conducting such confirmations as a defensive maneuver in judicial proceedings.

Section IV: Planning and Budget

During the City's annual budget process, the Medical Examiner's Office is required to submit a budget request that reflects the level of resources that are needed to meet the Office's stated mission. The Fiscal Year 1996-97 expenditure appropriation for the San Francisco Medical Examiner's Office totals $3,242,150. This level of funding is $180,330 greater than the 1995-96 revised budget appropriation of $3,061,820 and $352,369 greater than the actual year-end expenditures of $2,889,781 reported by the Controller's Office for FY 1995-96.

Despite their participation in the annual budget process, the Medical Examiner's Office is unable to provide any specific information on the manner in which the budget request was generated, resource requirements for specific activities, or the current status of the budget at a project or activity level.

The inability to provide specific information on the origin of the Office's budget request makes it difficult to: a) provide an adequate level of justification for the items requested; b) allocate resources appropriately within the Office; c) determine how resources should be reallocated and whether all of the tasks necessary to complete the mission and purpose of each program can be accomplished; and d) estimate the unit cost of tasks conducted within the Office.

As part of the field work for this audit, the Budget Analyst requested information from budget submissions prepared by the Medical Examiner's Office for Fiscal Year 1996-97. The Medical Examiner's Office staff was unable to provide any such information. Additionally, the staff was unable to provide any explanation on the origin of the amount of funding requested, justifications for the amounts requested in specific line items, or whether any reallocation of resources was requested or has taken place. Yet, the Medical Examiner's Office holds that there is a prohibition, by the Mayor's Office, against requesting new equipment which would allow the replacement of outdated equipment in the Toxicology Laboratory.

Further, the Chief Medical Examiner and his staff were unable to provide any information on: a) how the non-personnel budget was formulated; b) how much of the non-personnel budget is allocated to each of the three major activities within Medical Services; and c) how much of the non-personnel budget has been expended on each of the three major activities, year-to-date. Consequently, Budget Analyst staff derived a method for determining the approximate allocation for each of the activities within the Medical Services Program.

It should be noted that the Chief Medical Examiner does not believe that the allocation of the medical services derived by the Budget Analyst's staff is accurate. However, he was unwilling to assist in developing a more accurate allocation and as of the writing of this report, has not provided back-up documentation used to prepare the FY 1996-97 budget for the Medical Examiner's Office.

The Chief Medical Examiner and his staff also indicated that they are not proficient in reviewing and analyzing the financial reports that are produced and distributed to departments by the Controller's Office on a monthly basis. The Budget Analyst's review of such documents noted that the Medical Examiner's Office had a balance of $119,875 at the close of Fiscal Year 1995-96, showing that the overall appropriation for the department had been underexpended. To the extent possible, these resources could have been reallocated during the year to provide the Medical Examiner with the ability to obtain needed equipment, update the Toxicology Laboratory, adhere more closely to Universal Precautions, or request essential staff.

In order to plan more efficiently and prepare budget submissions that provide compelling and accurate information stating the resource needs of the Medical Examiner's Office, staff should make greater efforts to understand the financial reports that are provided by the City to monitor budget activities. Additionally, the Medical Examiner's Office should start documenting problems resulting from using laboratory equipment long past is useful life. By taking these measures, the Medical Examiner's Office would be able to take advantage of opportunities to request replacement equipment and essential staff positions, and reallocate resources in order to operate as efficiently as possible.

To gain a better understanding of the budget process and provide information on the estimated unit cost of activities, the Medical Examiner's Office should:

IV.1 Develop a better understanding of the information generated by the City's financial system (FAMIS) and utilize that information to monitor the Office's budget.

IV.2 Develop in-house expenditure and activity reports that can be used to estimate the amount and cost of various activities such as the cost of conducting toxicological tests, autopsies, and the production of slides and tissue samples.

IV.3 Take greater responsibility for determining how resources are allocated between the three programs by:

(a) Actively participating in the budget process and taking responsibility for the resources requested;

(b) Monitoring budget expenditures to determine whether changes in the existing allocation should be made in order to adequately fund activities in the various programs; and,

(c) Reading and understanding the budget instructions provided by the Controller, so that valid requests for resources are made, and compelling Line Item Explanations are prepared for new or replacement items.

The recommendations in this section can be implemented without adding financial or staff resources to the Medical Examiner's Office. All financial reports prepared by the Controller are available to the Medical Examiner's Office staff, as well as budget instructions. Additionally, the recent migration from the Wang Computer System to a LAN have given the Medical Examiner's Office the ability to develop the spreadsheet applications needed to monitor workload and expenditures in order to determine an estimated unit cost for specific activities.

Section V: Medical Examiner's Inquests

Section 27491.6 of the California Government Code allows the Coroner/Medical Examiner of a city or county to hold inquests to determine the circumstances and manner of death in cases that are within the Coroner/Medical Examiner's jurisdiction. A Coroner's Inquest is defined as a formal 'court' proceeding that is conducted to provide information that will assist in determining the manner in which an individual died.

Within the City and County of San Francisco, such inquests are held at the discretion of the Chief Medical Examiner, or when requested by the Attorney General, District Attorney, Sheriff, City Attorney or Chief of Police; are generally held without benefit of an inquest jury; and are generally held without representatives from the Police Department's Homicide or Criminal Investigations Unit or the District Attorney's Office.

As a result, the Homicide and Criminal Investigation Units of the Police Department and the District Attorney may not be alerted to situations that would warrant further investigation due to the questionable responses or behavior of witnesses in the inquest process.

In order to provide additional checks and balances to the inquest process, the Chief Medical Examiner should: 1) develop criteria to use in determining which inquests should be held with a jury; and 2) formally advise the District Attorney's Office and the Homicide and Criminal Investigation Units of the Police Department of the time and dates of all Medical Examiner's inquests.

In making the determination on the manner of death, the Chief Medical Examiner is usually the sole arbiter of the facts and information presented during the inquest. This results from a loss of funding for jury panels, and the authority granted to the Chief Medical Examiner by the California Government Code. Since the California Government Code grants such authority to the Medical Examiner, he is not required to notify the Police or District Attorney of the intent to hold an inquest nor ask them to attend the proceedings. However, due to the nature of some of the questions surrounding the circumstances of death, in inquested cases, notification of the Police and District Attorney may be prudent.

During this audit, the Budget Analyst's staff was present as two such cases were inquested. The failure to notify the Police and the District Attorney of the pending inquests appeared to directly contradict the Chief Medical Examiner's explanations of when it would be prudent to alert those entities of the planned proceedings. While technically meeting the requirements of the statutes and maintaining compliance with the Government Code, this practice does not allow the Police or the District Attorney to make independent assessments of the possible legal issues surrounding an individual's death.

Based on the results of our limited survey, the practice of holding inquests is waning throughout the Country. In the limited survey of Medical Examiner's Offices in California and elsewhere in the United States, only three of the eleven responding jurisdictions indicated that inquests of any kind are held. Only one of the eleven indicated that the inquests, when held, are conducted by the Chief Medical Examiner. One jurisdiction, Los Angeles County, indicated that Psychological Autopsies are now used to determine between 'Suicide' and 'Accident' as the manner of death. Los Angeles County finds this practice much more efficient and economical than conducting inquests.

The practice of conducting psychological autopsies, used in Los Angeles County reportedly costs approximately $1,000 per case. Medical staff estimates that approximately six to eight psychological autopsies are conducted annually at a cost of approximately $6,000 to $8,000. In San Francisco, Medical Examiner's Inquests are conducted with known costs of approximately $34,914, (the cost of the salary and benefits for the 0.6 FTE Court Reporter). With an average of 20 inquests per year, the unit cost of conducting each inquest is at least $1,724, excluding the cost of the Chief

Medical Examiner's and Investigator's time. Changing current practices of conducting inquests to using psychological autopsies could result in savings of $724 per case inquested using the psychological autopsy process.

The Medical Examiner should:

V.1 Use psychological autopsies to make determinations between accident and suicide as the manner of death. This could result in savings of $724 per case inquested, using the psychological autopsy process.

V.2 Develop a method of estimating the cost of conducting an inquest so it is possible to determine what portion of the Medical Examiner's Office resources are dedicated to this function and the viability of alternatives based on cost, time and informational value of the proceedings.

V.3 Develop a policy of formally notifying the Police Department and District Attorney's Office of inquests so they can make their own assessment regarding the need to send an observer.

Implementation of these recommendations could result in net savings of up to approximately $14,480 per year. Additionally, implementing these recommendations would allow the Police and District Attorney to make independent assessments regarding the potential legal issues surrounding the circumstances of the death of the individual being inquested. In the event that legal proceedings are required, a much stronger case could be presented by the Police and District Attorney.

In response to Section V of the audit report, the Chief Medical Examiner states:

- The Department always notifies appropriate agencies of inquests that may be of interest to them and will continue to make notification a formal policy in the future;
- Psychological autopsies are commonly performed by the Chief Medical Examiner and his staff; and,
- The Chief Medical Examiner is a licensed physician, board certified in several specialties, and has special training in the determination of the cause and manner of death.

In the audit report, the Budget Analyst:

- Does not question the Chief Medical Examiner's qualifications with regard to determining the cause and manner of death nor suggest that it is not his duty to make such determinations under Section 27491 of the California Government Code;

- Recommends a formal process of notifying the Police and District Attorney of all inquests after determining, through interviews with the responding Police Officer in one case, and six Deputy District Attorneys and the District Attorney, that these parties are not routinely or formally notified of scheduled inquests and the basis of the inquests; and,

- Recommends that when appropriate, the Chief Medical Examiner use psychological autopsies to determine between 'accident' and 'suicide' as the manner of death.

The Budget Analyst's report states that the Chief Medical Examiner should continue to use information from the Investigator's reports and increase the use of information gathered by professionals trained in human behavior. To our knowledge, based on a review of the Chief Medical Examiner's Curriculum Vitae, he is not board certified in psychiatry, and does not possess any special training in the field of mental health, or hold advanced degrees in psychology. As such, the Chief Medical Examiner, while cognizant of human behavior, is not a behaviorist. Our recommendation specifically states that the psychological information should be gathered and analyzed by professionals trained in human behavior and mental health.

Section VI: Organization

The current organizational structure of the Medical Examiner's Office illustrates an overly broad span of management control for the Chief Medical Examiner and Administrative Coroner as a result of 1) the extensive duties, activities and supervisory responsibilities undertaken by these two individuals; and 2) recent events related to staffing changes, vacancies and litigation.

As a result of these broad spans of control, problems have arisen, such as: a general lack of supervision of line staff; the neglect of internal controls, policies and other duties; irrational and unclear lines of reporting; and low employee morale.

The Chief Medical Examiner has direct management and supervisory responsibility over the Toxicology Laboratory, the Histology Laboratory and the Pathology Section (Autopsies). Of the 39 employees, which equates to approximately 36.51 permanent FTEs in the Medical Examiner's Office, there are 13 employees who report directly to the Chief Medical Examiner, including the part-time Court Reporter. The Chief Medical Examiner also has indirect oversight over Investigations and Administration, through the Administrative Coroner. Additionally, numerous outside duties require the Chief Medical Examiner's time. These duties include (1) serving as Medical Director for Igenex Laboratories in Palo Alto, California; (2) periodically appearing in court as an expert witness for other jurisdictions; (3) giving presentations at seminars and conferences; and (4) conducting research and co-authoring articles.

The Administrative Coroner has direct oversight responsibilities for property control, budget, purchasing, clerical, billing, medical transcription, payroll, personnel and investigative functions. In addition, the Administrative Coroner manages the Indigent Burial Program. Of the 39 employees in the Medical Examiner's Office, there are 26 full-time and part-time employees who directly report to the Administrative Coroner.

Both the Chief Medical Examiner and the Administrative Coroner have taken personal responsibility for performing certain tasks which could be performed by lower-level staff. For example, the Chief Medical Examiner administers flu shots and other vaccines to City staff on demand and manages the two laboratories. The Administrative Coroner performs various clerical duties such as answering telephones, releasing property to families and other functions which could easily be performed by lower level investigative or clerical personnel.

Based on our interviews with current and former staff and our review of the Department's organization and operations, we do not believe that it is reasonable to expect two individuals to perform such a wide range and large number of duties effectively. As a result, sufficient time has not been dedicated to preparing and updating administrative and procedures manuals throughout the Department. Although an administrative guidelines manual exists, it applies only to investigations. There are no comprehensive procedural manuals for either of the two laboratories (Toxicology or Histology) or for autopsies.

Further, due to the elimination of the Forensic Toxicologist position, the Chief Medical Examiner has undertaken the responsibility of managing and supervising the toxicology laboratory. According to guidelines established for forensic toxicology laboratories by the National Association of Medical Examiners (NAME), the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicologists (AAFT), a toxicology laboratory should be directed by a chief forensic toxicologist. The Chief Medical Examiner states that he meets the requirements for membership in the society of Forensic Toxicologists, but it is clear from our review that he cannot dedicate the required time towards supervision of the toxicology laboratory function due to his competing responsibilities.

In accordance with the position description, the Forensic Lab Manager is responsible for maintaining a quality assurance program for both laboratories. However, based on our observations and interviews with toxicology staff, the existing Forensic Lab Manager spends only one hour per week in the lab to check inventory and verify supply orders. Thus, this position is not being utilized to its full potential and should be required to provide managerial and supervisory oversight of all laboratory functions.

Our interviews with staff of the Medical Examiner's Office revealed widespread dissatisfaction with the management styles of both the Chief Medical Examiner and the Administrative Coroner. Complaints related primarily to the large span of control of these two positions and the lack of clearly stated policies and procedures. This dissatisfaction with management has been a major contributor to low employee morale negatively impacting productivity and performance. Although this is a personnel issue, there are structural changes which could be made to the Department which would reduce the span of control for these top two positions, establish clearer reporting and supervisory responsibilities, and thus potentially lessen the friction between existing management and line staff.

Because of the sameness of functions described above, several jurisdictions have combined the Public Administrator and Coroner functions into one office. In fact, in a survey of 37 California counties by the San Mateo County Coroner's Office, seven counties reported that they have combined Coroner/Public Administrator offices. These counties are: Fresno, Kern, Humboldt, Sutter, Tehama, Trinity and Kings Counties.

To improve the overall management and organization of the Medical Examiner's Office (1) the Chief Medical Examiner should (a) assume supervisory and management responsibility of the Medical Services functions of the Office, in accordance with Recommendation VI.1 of this report; and (b) delegate certain management and supervisory responsibilities to more appropriate Medical Examiner's staff, in accordance with Recommendations V1.2, VI.3 and VI.4; and, (2) the Director of Administrative Services should reorganize the Medical Examiner and the Office of the Public Administrator/Guardian in accordance with Recommendations VI.5 and VI.6 of this report, for an estimated savings of $109,610 annually.

Specifically, the Chief Medical Examiner should:

VI.1 Work with the Human Resources Department to revise the position description for the Chief Medical Examiner, in order to provide the Chief Medical Examiner with responsibility for oversight of the medical and technical functions of the Medical Examiner's Office, as well as limited supervisory duties.

VI.2 Work with the Human Resources Department to create a consolidated Forensic Laboratory Manager/Forensic Toxicologist position in the Medical Examiner's Office and delegate responsibility for management and supervision of the Medical Examiner's Office laboratories to this consolidated position.

VI.3 Revise reporting relationships in the Medical Services Division in order to delegate supervisory responsibility for Histology Laboratory staff, Pathology staff and Medical Transcriber Typists to the Forensic Pathologists.

VI.4 Transfer responsibility for supervision of the investigative function from the Administrative Coroner to the most senior Coroner's Investigator in the Medical Examiner's Office, and implement a formal reporting procedure for documenting the frequency and duration of field visits and recording the observations made during such visits by the Senior Coroner's Investigator.

VI.5 Pending the recommended consolidation of the Medical Examiner's Office and the Public Administrator/Guardian's Office by the Director of Administrative Services,

(a) Transfer management and oversight of the administrative support and investigative functions of the Medical Examiner's Office to the Public Administrator/Public Guardian;

(b) Eliminate the Administrative Coroner and Executive Secretary positions through attrition;

(c) Create a pool of clerical staff in the combined Public Administrator/Public Guardian and Medical Examiner's Office which can be assigned work related to both the Public Administrator/Public Guardian and Medical Examiner functions; and,

(d) Coordinate with the Public Administrator/Public Guardian on matters concerning the Medical Examiner's Office, as needed.

The Public Administrator/Guardian should:

VI.6 Pending the recommended consolidation of the Medical Examiner's Office and the Public Administrator/Public Guardian's Office by the Director of Administrative Services, the Public Administrator/Public Guardian should implement various administrative procedures, including:

(a) Assume responsibility for management and oversight of the administrative support and investigative functions of the Medical Examiner's Office;

(b) Provide direct supervision of the Senior Coroner's Investigator and the Senior Management Assistant in the Medical Examiner's Office;

(c) Create a pool of existing Medical Examiner's Office and Public Administrator/Public Guardian's clerical staff which can be assigned work related either to the Public Administrator/Public Guardian's Office or the Medical Examiner's Office;

(d) File a request with Human Resources Department for the upwards reclassification of an existing Public Administrator/Public Guardian 1426 Senior Clerk Typist to a 1450 Executive Secretary I position; and,

(e) Coordinate with the Chief Medical Examiner on matters concerning the Medical Examiner's Office as needed.

The Director of Administrative Services should:

VI.7 Reorganize the Medical Examiner's Office and the Public Administrator/Public Guardian's Office in accordance with Recommendations VI.5 and VI.6, above.

In response to Section VI of the audit report, the Chief Medical Examiner states:

- The passage in this audit report regarding the property control audit by the Controller does not mention that the Controller found that with the new safeguards in place, the Medical Examiner's property and revenue money control was appropriate.

The Budget Analyst acknowledges that two of the specific recommendations, outlined in the Controller's audit report have been implemented. However, the Medical Examiner's Office, as of the writing of this report, has not:

- Worked with the Controller's Office and the Acting Director of Administrative Services to determine whether the property bank account should be closed and payments to relatives of decedents be paid through the Controller's Office;

- Provided adequate supervision of the employees assigned to account for the cash and revenues of the Office;

- Provided evidence of summary records of the cash it collects from decedents and the amounts it distributes;

- Provided summary records of its revenues and reconciled the amounts it records as collected to the amounts it deposits with the Treasurer on a monthly basis; or,

- Provided evidence that it remits to the Treasurer any decedents' cash the Office has not distributed within 90 days after an inquest of the decedent.

Without specifically addressing each of the recommendations contained in the Controller's audit report, the Medical Examiner's Office has not provided sufficient remedy for the problems that led to the Controller's findings.

Section VII: Staff and Training

During the course of this management audit, the Chief Medical Examiner expressed concerns regarding staffing levels and workload as a result of budget and staffing reductions, as well as existing vacancies in authorized positions. The number of authorized positions has decreased from 39.00 authorized permanent positions in FY 1992-93 to 36.51 authorized permanent positions in FY 1996-97, or a reduction of 2.49 positions (6.4 percent).

As part of the management audit of the Medical Examiner's Office, the Budget Analyst examined issues related to staffing levels, workload, training and staff qualifications within each division of the Medical Examiner's Office. In summary, the Budget Analyst found:

- Deficiencies in training for Pathology, Investigations and Toxicology staff. For example, new pathologists are not trained in the protocols used in the Medical Examiner's Office and a comprehensive procedure manual has not been prepared to provide information on expected protocols. Additionally, the toxicology staff is not adequately cross-trained in all testing procedures, and in the operation of all instruments and equipment required to independently complete the various toxicological analyses, nor has a comprehensive procedural manual been prepared to provide detailed outlines of protocols for such tests.

- Discrepancies between staff qualifications and the required duties of and/or the actual duties being performed by staff members in the Pathology Section. For example, two of the five pathologists are not board certified in forensic toxicology nor have they been declared qualified to sit for the certification examination by the American Board of Pathology. As such, they do not meet the minimum qualifications outlined in the Civil Service job description.

- Excessive staffing in Pathology, based on a workload analysis. For example, on average each Forensic Pathologist in San Francisco conducts 1.2 full autopsies per day and including the 1.2 full autopsies, discharges 1.4 cases per day. In other jurisdictions surveyed for this management audit, the Forensic Pathologists conduct an average of 1.01 to 1.6 full autopsies per day and, including those full autopsies, discharge between 1.35 and 4.2 cases per day. As such, the Forensic Pathologist's in San Francisco are at the lower end of the range for the total number of cases discharged per day.

Additional detail on the specific findings with regard to staff and training are included in the following three sections.

Section VII.1: Pathology

In our review of the Pathology Section's staffing and training, we found that: (1) two of the three full-time Forensic Pathologists currently employed by the Medical Examiner's Office are not board eligible or board certified in forensic pathology; (2) the current staff of Forensic Autopsy Technicians are not being utilized to their potential; (3) two of the observations made by the Office of the Chief Administrative Officer (CAO) in a 1990 review of the Medical Examiner's Office regarding (a) the lack of in-service training for Pathology staff, and (b) the lack of training for Pathology staff in the use of x-ray equipment, have not been addressed; (4) a comprehensive policies and procedures manual for the Pathology Section does not exist; and (5) the workload in Pathology does not appear to justify the current authorized staffing level for Forensic Pathologists.

As a result, some staff do not meet qualifications as outlined in the Civil Service job descriptions; opportunities for ongoing training are compromised; no clear policies and procedures are articulated; and the overall workload for Pathology staff is low.

The Chief Medical Examiner should establish clearly articulated autopsy procedures; reclassify two Forensic Pathologist positions to Physician Specialist positions; establish a program to improve the training and qualifications of the Pathology staff; and devote half of his time to conducting forensic exams and observing staff who conduct autopsies. This can be accomplished by eliminating current duties such as managing the Toxicology and Histology laboratories, responding to homicide and accident scenes when not required to do so, and directly supervising and managing responsibility for 13 employees.

The Chief Medical Examiner should:

VII.1.1 File a requisition with the Department of Human Resources to reclassify the two Forensic Pathologists who currently do not meet the minimum qualifications for this classification, to the appropriate classification which is consistent with their qualifications. The reclassification would not affect the compensation of the current incumbents. However, salary savings would be achieved if the incumbents vacate these positions.

VII.1.2 Eliminate three 2582 Forensic Pathologist positions and create two new, less costly 2230 Physician Specialists which have completed a residency program and are Board eligible in anatomic pathology. These two new staff should be available to assist the two remaining Forensic Pathologists in performing

autopsies and other procedures but should not be required to participate in the on-call rotations for Forensic Pathologists. This change would result in a reduction of one position. These reductions could be achieved through attrition.

VII.1.3 Assist the Forensic Pathology staff with the performance of autopsies on a routine basis, and participate in on-call rotations.

VII.1.4 Establish a detailed written protocol for Forensic Autopsy Technicians which takes into account the medical backgrounds and/or forensic experience of the Forensic Autopsy Technicians currently employed by the Medical Examiner's Office.

VII.1.5 Prepare a policies and procedures manual for the Pathology Section which includes

(a) Definitions and criteria for each forensic examination procedure (e.g. full autopsy, partial autopsy, external examination, etc.) and special procedure (e.g. SIDS protocol, motor vehicle accidents, etc.) conducted in the Medical Examiner's Office; and,

(b) A detailed description of the steps involved in performing each of these procedures.

VII.1.6 Report back to the Board of Supervisors within six months of the issuance of this report on progress made in

(a) Developing and implementing an in-service training program for Forensic Pathology staff; and,

(b) Providing training to Forensic Pathology staff in the use of x-ray equipment.

In response to Section VII.1 of the audit report, the Chief Medical Examiner states:

- Four out of the five Pathologists are board certified or board 'eligible' in forensic pathology;
- For accreditation the Medical Examiner's Office requires five full-time forensic pathologists in order to re-establish the training program and handle the workload; and,
- The Budget Analyst's data comparison of the number of cases per position per year between various departments around the country is not valid.

The Budget Analyst has contacted the American Board of Pathology and the National Association of Medical Examiners (NAME), and obtained information from the medical staff of the Medical Examiner's Office to ascertain that:

- There are not five full-time Pathologists in the Medical Examiner's Office; there are three full-time and two part-time Pathologists. Moreover, the Budget Analyst has not made any recommendations to reduce the number of licensed doctors in Medical Services;

- Of the five Pathologists, two are board certified in forensic pathology, one is board certified in anatomic and clinical pathology; one is qualified to sit for the anatomic pathology certification exam; and one has completed fellowships in clinical and forensic pathology but has not provided information that states he/she is qualified to sit for the forensic pathology certification exam. This information on the status of the current staff has been confirmed from documents provided by the Chief Medical Examiner;

- NAME does not state anywhere in its regulations on accreditation that there must be five board certified or qualified forensic pathologists on staff for an operation the size of the San Francisco Medical Examiner's Office. The requirements are for one Chief Medical Examiner and five other licensed physicians (e.g. pathologists, surgeons, etc.) who perform forensic work; and,

- The data shown in Appendix III accounts for the difference between the total number of cases reported and the number of cases determined to be under the jurisdiction of the Medical Examiner's Office. For example, the Chief Medical Examiner does not acknowledge that the 6,000 case difference between the 19,000 deaths reported to the Los Angeles Medical Examiner/Coroner's Office and the 13,000 deaths determined to be under their jurisdiction is analogous to the 5,000 deaths reported to the San Francisco Medical Examiner's Office and the 1,800 determined to be under its jurisdiction.

The Budget Analyst would further note that the American Board of Pathology does not recognize the term 'board eligible' as it clearly states on page 36 of its Booklet of Information, and the Chief Medical Examiner stated in the exit conference that he determined, based on the training of the applicants, that the successful applicants were 'board eligible' in forensic pathology. The Chief Medical Examiner does not appear on the list of current or former officers and trustees of the American Board of Pathology and also does not appear as a member of one of the 16 test and recertification committees, which includes the test committee for forensic pathology.

Section VII.2: Investigations

A review of minimum staffing requirements and current staffing levels in the Investigations Division revealed that the Division is overstaffed in permanent Coroner's Investigator positions. Additionally, the staff of part-time Drivers are paid at the same salary as entry level Coroner's Investigators, even though Drivers do not possess the same licensing and other qualifications as full-time Coroner's Investigators.

In addition, based on interviews with staff and on discussions with other jurisdictions, we recommend that the Medical Examiner's Office prepare a comprehensive training program for all Coroner's Investigators, which should include some combination of training in homicide investigations, blood spatter analysis, crime scene investigations, etc. Additional training would assist the Forensic Pathologists in making determinations as to the cause and manner of death and would help ensure that Forensic Pathologists are called to suspected homicides and motor vehicle accidents only when absolutely necessary.

The implementation of these recommendations would (a) reduce the minimum staffing requirements for Coroner's Investigators while maintaining the current level of service; (b) allow the Medical Examiner to provide backfill coverage for Coroner's Investigators with lower-cost Drivers; (c) increase the competency of all Coroner's Investigators, thereby possibly reducing call-outs, which are responses to death scenes by Forensic Pathologists; and, (d) result in cost savings of an estimated $81,957 per year.

The Chief Medical Examiner should:

VII.2.1 Change the minimum staffing practices for Coroner's Investigators during the swing shift from two to one Coroner's Investigator by arranging for calls to be automatically forwarded to the DPH Paramedic Dispatch phone number after four rings, if no one is available to answer the phone in the Medical Examiner's Office, as is currently the practice during the midnight shift.

VII.2.2 Reduce the number of Coroner's Investigator positions by one position, which presently totals 11 positions, to 10 positions. This could be accomplished immediately since there is currently one vacancy in the Coroner's Investigator classification.

VII.2.3 In cooperation with the Human Resources Department, formally create a part-time Driver classification to perform the duties performed by current staff. This new class of part-time Driver would be paid at the same hourly rate as the 2520 Morgue Attendant classification or the 2523 Forensic Autopsy Technician classification.

VII.2.4 Reduce the annual temporary salaries budget for Investigative Services by $14,149 , from $70,000 to $55,851 per year.

VII.2.5 Prepare a comprehensive training program for all Coroner's Investigators, which would include some combination of homicide investigations, blood spatter analysis, crime scene investigations and/or other types of training.

In response to Section VII.2 of the audit report the Chief Medical Examiner states:

- He disagrees with the Budget Analyst's recommendation to reduce the number of Investigators by one because it increases overtime;
- That it is unfair to ask the paramedics to answer the phones between 4:00 PM and Midnight since the phones are typically extremely busy; and,
- The Office has previously requested the Department of Human Resources to create a new classification for the as-needed Investigator who would be paid an entry level salary instead of the same salary as a full-time permanent Investigator.

The Budget Analyst states in the audit report:

- There is currently a vacancy in the Investigator classification and the scheduling presented by the Department meets the current desired staffing requirement for Investigators without requiring increased overtime;
- Based on the Budget Analyst's observations, the call volume drops significantly after 7:00 PM and the DPH Paramedic Division may have to field a total of 20 calls in a 16-hour period; and,
- The current staffing consists of on-call Drivers who are paid the same amount as an entry level Investigator, but who do not possess the skills or training to qualify for an Investigator position.

The Budget Analyst would also note that the argument that the paramedics do not have access to Medical Examiner's Office records to furnish information is specious. Under the current arrangement the paramedics take a message that is forwarded to the Investigators on duty. The paramedics currently have no access to the Medical Examiner's Office records and do not attempt to provide information to individuals calling regarding deceased persons. Also, the Medical Examiner's Office staff has rejected technological solutions to the telephone answering dilemma such as forwarding such calls to beepers and the use of cellular telephones.

Section VII.3: Toxicology

The National Association of Medical Examiners (NAME), the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicology (AAFT) recommend cross-training for all toxicology laboratory staff.

The Budget Analyst has determined that the amount of training on instrumentation and procedures should be increased for all toxicology personnel and that the additional training would improve the flow of work, eliminate the dependence of staff on a specific person to complete a test, and reduce turn-around time.

Accordingly, the Chief Medical Examiner should (a) revise the position description for the Assistant Forensic Toxicologist I position to place a greater emphasis on training in the use of laboratory equipment used to conduct tests; (b) develop a procedural manual for Toxicology staff; and (c) as recommended in Sections III and VI of this report, hire a qualified staff person to manage the Toxicology Laboratory.

The Chief Medical Examiner should:

VII.3.1 Revise the position description for the 2456 Assistant Forensic Toxicologist I position to provide a greater emphasis on the ability to independently complete toxicological tests, and to possess familiarity with the equipment and instruments used in conducting such tests.

In response to Section VII.3 of the audit report, the Chief Medical Examiner states:

- The experience held by the staff of the Toxicology Laboratory and the credentials of the personnel qualify them for membership in the Society of Forensic Toxicologists; and,

- Both the Chief Medical Examiner and the Assistant Toxicologist II qualify under the Society of Forensic Toxicologist guidelines to manage the toxicology laboratory.

The Budget Analyst states:

- Membership in the Society of Forensic Toxicologists is not at issue;

- The ability of the Toxicology Laboratory to become accredited and the proper management and oversight of the facility is at issue; and,

- NAME states, as does the Society of Forensic Toxicologists, that the Toxicologist responsible for managing and supervising the laboratory, should hold a doctorate degree from an accredited institution with a chemical, toxicological or pharmaceutical science as a major subject with four years experience in forensic toxicology, or be a toxicologist certified by the American Board of Forensic Toxicologists.

We wish to thank the staff of the Medical Examiner's Office, Department of Administrative Services, Department of Public Health, District Attorney, Public Defender, City Attorney and Police Department for their assistance and cooperation during this management audit. Without their assistance, our task would have been much more difficult.

Respectfully submitted,

Harvey M. Rose
Budget Analyst

c: President Kaufman
Supervisor Bierman
Supervisor Brown
Supervisor Katz
Supervisor Leal
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Supervisor Newsom
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Clerk of the Board
Controller
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Boyd Stephens, Chief Medical Examiner
Louise Renne, City Attorney
Terence Hallinan, District Attorney
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Sandra Hernandez, Director of Health
Fred Lau, Chief of Police
Ricardo Hernandez, Public Administrator/Public Guardian
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Introduction

At the request of the San Francisco Board of Supervisors, the Budget Analyst conducted this management audit of the Medical Examiner's Office of the City and County of San Francisco

Audit Scope

The scope of this management audit included a comprehensive examination of the operations, organizational structure, and staffing of the Medical Examiner's Office and its interactions with other City departments, private mortuaries and the citizens of the City and County of San Francisco. The Medical Examiner's Office is authorized by the California Government Code for the purpose of investigating and determining the manner and cause of death, and signing the death certificate in cases that fit the following criteria:

- The death is sudden, violent or unusual;
- The deceased has not been attended by a physician in the 20 days prior to death;
- The death is related to or follows a known or suspected self-induced abortion;
- The death is a known or suspected homicide, suicide, or accidental poisoning;
- The death is known or suspected to be the result of or related to an accident or injury;
- The death is due to drowning, fire, hanging, gunshot, stabbing, cutting, exposure, starvation, acute alcoholism, drug addiction, strangulation, aspiration, or where the suspected cause of death is Sudden Infant Death Syndrome (SIDS);
- The death in whole or in part is occasioned by criminal means; or,
- The death is known or suspected to be related to a contagious disease and constitutes a public health hazard, or is known or suspected to be related to an occupational disease or occupational hazard.

In addition, all deaths: occurring while an individual is in custody, or under sentence; resulting from involvement with a law enforcement action; involving a patient in a state hospital serving the developmentally disabled, and operated by the State Department of Developmental Services; or occurring under circumstances that afford reasonable grounds to suspect that the death was caused by the criminal act of another, fall under the jurisdiction of the Medical Examiner's Office.

In order to assess the Medical Examiner's Office's fulfillment of its duties, the audit focused on the following areas:

- General operations and procedures with particular focus on the daily activities that are carried out to ensure that the Medical Examiner's Office fulfills its duties and that the staff understands all processes and procedures;

- Organization and staffing to determine the Medical Examiner's Office's placement in the overall organization of the City and County, and the internal organizational structure of the Office, including, lines of authority and responsibility within the Medical Examiner's Office, levels of staffing and management and the use of staff;

- Finance and budget to review current revenue and expenditure appropriations for the office and changes in appropriation levels over the past 5 years and the impact of those changes on the ability of the Medical Examiner's Office to fulfill its functions for the City; and

- Interdepartmental relations and community perceptions to ascertain the actual and perceived levels of service the Medical Examiner's Office provides for law enforcement and judicial agencies, the citizens of the City and County of San Francisco, private mortuaries, and private physicians.

Methodology

This audit was conducted in accordance with the generally accepted auditing practices established by Comptroller General of the United States and detailed in the United States General Accounting Office publication, *Government Auditing Standards 1994 Revision*. The following procedures were used to obtain information and verify the findings detailed in this audit report.

- Interviews with key personnel within the Medical Examiner's Office, the District Attorney's Office, the San Francisco Police Department, the Office of the Public Defender, and the Department of Health Services.

- Interviews with the staff of the Medical Examiner's Office.

- Discussions with independent toxicologists, independent clinical laboratories in the Bay Area, and Medical Examiners' and Coroners' staff from the 10 largest California counties and selected jurisdictions around the United States.

- Review and analysis of documents outlining the roles and responsibilities of the various sections of the Medical Examiner's Office, policy and procedure manuals outlining the expectations and steps of forensic examinations and pathology and toxicology testing, and previous audits and reports conducted by the Controller's

Internal Audit Division, the Office of the Chief Administrative Office, and the 1995-96 San Francisco Civil Grand Jury.

- A review of control procedures for processing and releasing the property of the deceased, the treatment and handling of evidence from crime scenes and specimen resulting from forensic examination procedures, including maintaining adequate chain of custody.

- Observations of administrative procedures, toxicology and pathology procedures for conducting required tests, responses to death scenes, processing bodies brought into the Medical Examiner's Office and the work performed by the Medical Examiner's Investigators at death scenes.

- A limited sampling of cases under the jurisdiction of the Medical Examiner's Office to determine the process used to "sign out" the case and the completeness of the permanent file for each case including autopsy, pathology and toxicology reports.

- Observations of Medical Examiner's Inquests and the disposition of such cases by the Medical Examiner, Police Department and District Attorney.

- The evaluation of rate schedules used by the Medical Examiner's Office for various procedures that are performed for non-Medical Examiner cases including the costs of such procedures and the revenue generated.

- A formulation of recommendations to improve the operations, organizational structure, and management of the Medical Examiner's Office for the City and County of San Francisco.

History and Overview of the Medical Examiner - Coroner Office for the City and County of San Francisco

Establishing and Authorizing a Medical Examiner's Office

As previously noted, the Medical Examiner's Office is mandated and authorized by the California Government Code Section 24010 which states:

> "Notwithstanding any other provision of law, the board of supervisors may by ordinance abolish the office of coroner and provide instead for the office of medical examiner, to be appointed by the said board and to exercise the powers and perform the duties of the coroner. The medical examiner shall be a licensed physician and surgeon duly qualified as a specialist in pathology."

The Charter for the City and County of San Francisco (Charter) established and authorized the Office and the position of Coroner. As originally established the

Medical Examiner/Coroner's Office was under the jurisdiction of the Office of the Chief Administrative Officer (CAO). The individual appointed to serve is a Charter Officer of the City and serves at the pleasure of the CAO.

Under a provision of the 1996 Charter Reform, there is no longer a position of CAO and the Medical Examiner's Office now reports to the Director of Administrative Services. The changes to the Charter have not affected the internal lines of authority and reporting for the Medical Examiner's Office. Section VI of this report provides a detailed review of the organizational structure of the Medical Examiner's Office, the lines of reporting, and current staffing configurations for each of the functional areas of the office.

Interaction with Other City Departments, Agencies and the Public

The changes to the Medical Examiner's Office as a result of Charter Reform also has not changed the Office's obligation to work cooperatively with other City departments and law enforcement and judicial agencies. It is essential that the Medical Examiner's Office maintain open lines of communication with the Police Department's Homicide and Criminal Investigation Units, and the Police Crime Lab and Photography Lab.

The work performed in concert with these units is a critical piece of investigating homicides and successfully charging individuals with Driving Under the Influence (DUI).

Interactions with State and other Public Agencies

The Medical Examiner's Office provides crucial information used by the District Attorney's Office (DA), and the Public Defender's Office (PD) in the prosecution of suspects. Material gathered during the forensic examination can be requested by the District Attorney or Public Defender to be used as evidence during a trial. Therefore, a strict chain of custody must be established and verified to ensure that the evidence is not tainted and has not been tampered with. Establishing the chain of custody for items recovered during the forensic examination is the responsibility of the Medical Examiner's Office. Sections: III Toxicology and V Medical Examiner's Inquests of this report provide information on the interactions of the Medical Examiner's Office with the District Attorney and Public Defender, as well as the procedures used to establish and maintain the chain of custody.

The Public Administrator works in conjunction with the Medical Examiner's Office to coordinate the investigation of the death of indigent individuals. If the Public Administrator has determined that the individual is indigent, next-of-kin can not be located and there are no assets in decedent's estate, the deceased indigent will be placed under the jurisdiction of the Medical Examiner's Office. The Medical Examiner, Administrative Coroner and Investigators provide information to the Public Administrator and arrange for removal of the deceased body.

The State Department of Health Services (DHS) and the City and County of San Francisco Department of Public Health (DPH), and Medical Examiner's Office work in conjunction on several levels. Most basically, all death certificates signed by the Medical Examiner's Office are forwarded to DPH to be recorded. From there, all death certificates are sent to Sacramento to the Death Registry for final recordation. The Medical Examiner's Office also participates in two studies being conducted by the State Department of Health Services. One of the studies initiated by the State Department of Health Services tracks AIDS cases and AIDS related deaths in the City. Through the confidential testing of all decedents deemed Medical Examiner's Office cases, information on the HIV status of the decedent is provided to the State Department of Health Services.

The Medical Examiner's Office also participates in a state-wide study and program tracking the incidence of Sudden Infant Death Syndrome (SIDS). The Medical Examiner's Office and DHS employ a prescribed protocol when investigating and responding to the needs of families when there is a death of an infant for "no known cause." The protocol used includes the completion of a 22-page questionnaire that provides information on the circumstances of the birth, life and death of the infant, as well as autopsy procedures to obtain certain types of information. Through the implementation of these protocols, the State and DHS hope to gain valuable information on the causes and prevention of SIDS. The information can then be used in educational and promotional materials for the "Back to Sleep" Program. For participation in this state-wide program the Medical Examiner's Office receives revenue from the State. The funds have been used to upgrade computer equipment, decreasing requests for General Fund support for such items.

Survey of Entities Interacting with the Medical Examiner's Office

As part of this study, the budget analyst audit team conducted a survey of other City departments and governmental agencies to assess the level of service provided by the Medical Examiner's Office and how knowledgeable Medical Examiner's Office staff are of policy and procedures. Specifically, the survey was designed to address the issue of whether Medical Examiner's Office staff, who interface with the public, are knowledgeable and execute appropriate procedures and policies when interacting with next of kin, especially in regards to meeting the cultural and religious needs of families.

The survey consisted of contacting 15 agencies by telephone, of which 13 agencies responded to questions by phone or via fax. The 13 respondents included ten funeral homes, one hospice, and two public programs (see Appendix II). These types of agencies were chosen because they interact both with the Medical Examiner's Office and the public at-large (with the exception of the Department of Public Health's AIDS Project), and these agencies have the opportunity to observe the Medical Examiner's Office staff interact with the public. Individuals or families who

have had interaction with the Medical Examiner's Office due to a death of a friend or family member were not contacted to participate in this survey. The Budget Analyst's audit team determined that direct communication with such individuals or families may infringe upon their privacy, as well as cause them unnecessary personal hardship.

The ten funeral homes and the one hospice, which are located in San Francisco, were chosen randomly. The two public agencies, the City and County of San Francisco Department of Public Health AIDS Project, and the Public Administrator/Public Guardian, specifically were chosen because they are able to observe or receive feedback from the public regarding the Medical Examiner's interaction with the public. In summary, all 13 respondents stated that Medical Examiner's Office staff had adequate knowledge of procedures and policies; although, one funeral home indicated that administrative staff who answer the telephone and interact with the public were not as well informed about procedures as the investigators. In addition, all 13 respondents indicated that the Medical Examiner's Office meets families' cultural and religious needs, and 12 of the 13 respondents indicated they were satisfied with the performance of the Medical Examiner's Office. Therefore, based on our survey results, the Budget Analyst concluded that Medical Examiner's Office is meeting its obligation to work cooperatively with these agencies and providing an adequate level of service to the public.

Major Accomplishments

The main objective of a management audit is to identify opportunities for improvement and cite areas where improvements on efficiency, effectiveness and economy can be achieved. However, the accomplishments of the Medical Examiner's Office should not be overlooked. Some of the recent accomplishments include:

- Cost reductions of approximately $100,000 per year resulting from canceling an outside contract to provide indigent burial and cremation services and bringing the program in-house.

- The conversion of the old WANG computer system to a Local Area Network (LAN) which has helped the Medical Examiner's Office improve the quality of the Medical Examiner's Office's records and created the ability to develop data retrieval and problem-solving applications;

- Reductions in Hazardous Chemical Waste, which has won awards for staff members. In 1991-1992 and before, the department generated 36 gallons of liquid hazardous chemical waste and 30 pounds of solid hazardous chemical waste. Through careful management and utilization of non-hazardous chemicals, the

department reports that it has reduced such waste to 18 gallons or less of liquid chemical waste and 5 pounds or less of solid chemical waste per year

- The Chief Medical Examiner has been a pioneer in Sudden Infant Death Syndrome (SIDS) research, with studies since the 1970's. The Chief Medical Examiner is one of the authors of what has become the standard in SIDS Investigations and Autopsy protocols for the State. The Chief Medical Examiner's participation in the "Back to Sleep" program and recognition as a leader in the efforts to reduce the number of deaths due to SIDS is commendable. During Fiscal Year 1994-95, there were only six SIDS cases. This was a substantial decrease from the previous Fiscal Year's 15 cases. By working in conjunction with the State and the DPH, the Chief Medical Examiner is personally committed to work on isolating the causes of SIDS and making SIDS a rare to nonexistent occurrence;

- The Medical Examiner's Office has received Peace officers Specialized Training certification which allows Peace Officer Standard Training of certified staff at no cost to the taxpayers of San Francisco;

- The Medical Examiner's Office, with the assistance of the Police Department has instituted a background check for Investigators;

- The Medical Examiner's Office, in conjunction with the Employee Assistance Program, has set up a Cultural Diversity Program to educate the staff and community, and build a stronger understanding on both sides of how the community can best be served by the Medical Examiner's Office. Several other counties have expressed an interest in setting up similar programs; and

- The Chief Medical Examiner also serves as the chair of the City's Child Death Committee. Even though this committee is mandated by law, the City and the Medical Examiner conducted meetings prior to this mandate to review the deaths of all individuals under the age of eighteen. The Child Death Committee meets monthly to share information available on the deaths of children, the services available to the families and the resources needed by the community to address concerns surrounding the deaths of juveniles and surviving siblings and family members. The Committee also assesses the state of the Mayor's Rapid Intervention Program and its ability to respond to crises and provide additional resources to schools and other groups needing additional resources.

In addition to these accomplishments, the Budget Analyst found, through interviews with other medical examiner and coroner offices in California and selected jurisdictions across the United States, that the current Chief Medical Examiner is very well respected in the forensic pathology community, and is certified by a majority of the western states and western Canada as a forensic expert. The recognition the Chief Medical Examiner receives as an expert is of great value to

the City and County of San Francisco, and has been a key factor in generating the City's reputation for providing the highest quality forensic work.

The Medical Examiner's Office staff is an extremely dedicated group of individuals who are committed to providing high quality and compassionate service to the citizens of San Francisco. This is a group of individuals who must interact with people at a very difficult and emotional time in their lives. The staff is concerned with ensuring that any contact citizens must have with the Medical Examiner's Office is as humane as possible under the circumstances, and that the information provided is accurate, helpful and affords the individuals some degree of solace.

The Budget Analyst's staff found the Medical Examiner's Office Investigators to be an extremely professional group of individuals who handle very intense and stressful situations. There are reported incidents of citizens who were not pleased with the outcome of their interaction with the Medical Examiner's Office, and the Medical Examiner's Office Investigators in particular. Upon reviewing and investigating incidents that were brought to our attention, we found that the Medical Examiner's Office Investigators responded appropriately, and acted in accordance with established laws of the State of California and existing Medical Examiner's Office policies and procedures.

Acknowledgments

Management audits must rely heavily on key personnel within the organizations under review to provide information and identify opportunities for improvement. We wish to acknowledge the assistance of the Forensic Pathologists, Drs. Trent, Ferenc, Frisby, and Nazareno for explaining autopsy and toxicology procedures, and generally, for their cooperation and assistance during this audit. We would also like to acknowledge and thank the Investigators from the Medical Examiner's Office, Police Department, District Attorney's Office, Public Defender's Office, and Department of Health for their cooperation and assistance. Their assistance and cooperation significantly assisted the Budget Analyst's efforts to complete this management audit.

- **In 1985, the State of California passed legislation requiring written consent prior to testing any person for the presence of Human Immunodeficiency Virus (HIV). The requirements of obtaining written consent prior to testing any individual for HIV are also contained in the San Francisco Municipal Code.**

- **Two employees contend that in July 1994, the Chief Medical Examiner for the City and County of San Francisco tested them for HIV without their implied or written consent. The Medical Examiner also provides testing for Tuberculosis, Hepatitis B, and as a benefit for Medical Examiner - Coroner employees, will administer Tetanus Booster shots, Hepatitis B vaccinations and flu shots.**

- **As a result of the Medical Examiner's Office's failure to have its employees sign written consents prior to HIV screening, two employees tested in July of 1994 have filed charges with the Equal Employment Opportunity Commission. One claim has resulted in a lawsuit, and the other claim against the City and County of San Francisco is still pending.**

- **The Medical Examiner should: 1) consistently enforce policies and procedures for testing all employees for HIV which include all of the elements required by law; 2) consistently obtain informed consent prior to testing any employee for Hepatitis B; and 3) develop a release form to be completed by employees prior to administering any vaccine. Barring the development of these forms and the consistent use of the recommended procedures, the Medical Examiner should refer all employees who wish to be tested for HIV, to the Forensic AIDS Project, one of the City Health Clinics, or their private physician to obtain the desired HIV test and other vaccinations.**

Legislative History and Intent

In 1985, the State of California passed legislation (Section 199.22 of the Health and Safety Code) that prohibits the testing of individuals for HIV without their expressed written consent. The law exist to protect the privacy of individuals and to discourage discrimination against individuals with certain conditions. As written, the laws do not permit an individual to waive the requirement nor can they imply consent through any actions or statements. The requirement to obtain written consent prior to testing includes employers and thereby protects an employee against involuntary testing.

In 1995 the Health and Safety Code was restructured and the statutes regarding the testing of individuals for the presence of HIV, and the notification of results of those tests, were renumbered. Under the current, restructured Health and Safety Code,

Sections 120975 through 121035 frame the conditions that must exist when testing individuals for HIV and notifying individuals of test results. Sections 120885 through 120895 note the exclusions to the conditions stipulated in Sections 120975 through 121035, based on the State's development of Alternative Test Sites.

The law defines Alternative Test Sites as a free standing facility that provides anonymous HIV testing, where no other medical or diagnostic services are provided. In order to meet this requirement the individual being tested must be unknown to the tester and cannot provide any information that would reveal his or her identity. This includes information such as a name, address, telephone number, or social security number, or any other information that would make it possible for the testing facility to contact the individual being tested. Any facility that provides HIV testing to individuals who are known to them, can be contacted by the facility, or are identified in any way, cannot be considered Alternative Test Sites under the existing State law.

All facilities providing testing for individuals who are known to them are considered Confidential Test Sites. Any testing performed at a confidential HIV testing site requires the written consent of the individual being tested. The forms granting the permission to test said individuals for HIV must be kept on file for three years. Section 199.22 [later renumbered to 120975] states:

> "Except in the case of a person treating a patient, no person shall test a person's blood for evidence of the antibodies to the probable causative agent of AIDS without the written consent of the subject of the test or the written consent of the subject, as provided in Section 199.27 [later renumbered to Section 120975], and the person giving the test shall have a written statement signed by the subject or conservator or other person, as provided in Section 199.27 [later renumbered to Section 120975] confirming that he or she obtained the consent from the subject...".

The only exclusion applicable to the Medical Examiner with regard to HIV testing is contained in subsection (b). The exclusion states:

> "Nothing in this section shall preclude a medical examiner or other physician from ordering or performing a blood test to detect antibodies to the probable causative agent of AIDS on a cadaver when an autopsy is performed or body parts are donated pursuant to the Uniform Anatomical Gift Act, provided pursuant to Chapter 3.5 (commencing with Section 7150) of Part 1 of Division 7."

HIV Testing by the Medical Examiner's Office

Members of the Medical Examiner's Office staff acknowledge that employees have been tested for the presence of HIV antibodies in their blood. Two employees contend that in July 1994, they were tested involuntarily for HIV and Hepatitis B. Additionally, as of July, 1994, employees being screened for HIV were not required to sign written consent forms, as required by California state law. The OSHA required Exposure Control Plan (see Section II: Universal Precautions) contains a prototype of a consent form to be signed by employees who wish to be tested for HIV.

Under state law, a facility can be designated as an 'Alternative Test Site' which permits testing of living subjects anonymously and without written consent. The Director of the San Francisco AIDS Project states that the Medical Examiner's Office is not considered an 'Alternative Test Site' which is defined as an alternative to the 'blood bank', and the only testing the Medical Examiner's Office is authorized to conduct, without obtaining the required written consent, is the testing of decedents. This testing is to be done without providing the identity of the test subject and the results are to be used to determine the prevalence of AIDS in the community. Any other HIV testing conducted by the Medical Examiner's Office must conform with the conditions set forth in the State Health and Safety Code, and court orders.

During the course of this management audit, the Budget Analyst staff was informed by the Chief Medical Examiner, the Administrative Coroner, and Medical Examiner's Office staff that testing of employees has continued and are being submitted to the Department of Public Health for analysis under the regulations defined in the Health and Safety Code. The Chief Medical Examiner further states that he does submit specimen for analysis from living and deceased individuals on the same form and that he has never been advised that submitting samples from living and deceased subjects, on the same form could present any problems. The Chief Medical Examiner also states that he has never been given any instructions to submit samples separately.

The Medical Examiner's Office should work with the Department o Public Health to 1) establish a protocol and form which segregates living from deceased subjects for HIV screening and 2) obtain the appropriate authorization to submit blood samples for HIV testing, that are not part of any State or federally funded AIDS surveillance project.

Basis for Testing Medical Examiner Office Employees for HIV and Hepatitis B

The nature and conditions of the work of several classifications of employees, in the Medical Examiner's Office, place those employees at risk for contracting bloodborne diseases. Pathologists, forensic autopsy technicians, lab technicians, investigators and office personnel handling property are all potentially exposed to bloodborne pathogens, including Hepatitis B and AIDS. To provide employees with a means of

monitoring the effects of their exposure, avoid the further spread of any disease and generally safeguard the health of the staff, testing and inoculations are provided to employees for Hepatitis B, HIV, tuberculosis and influenza.

Federal regulations require that all employees exposed to Hepatitis B receive testing, upon request, and that the vaccine be available to them in order to prevent inoculation. In order to comply with this requirement, the Medical Examiner's Office offers Hepatitis testing, and vaccinations to employees. The results of all Hepatitis B tests conducted are reported to the state. As a result of this reportable condition, Hepatitis B tests may be given with the less stringent standard of 'informed consent' of the person being tested. However, testing for HIV is not reportable to any state or federal authority and thus, must be conducted with the individual's prior knowledge and more stringent standards of written consent, stipulated in the State Health and Safety Code. Even if informed consent was the requirement for HIV testing, the requirements of providing informed consent cannot be met by simply telling the individual being tested that the testing procedure is voluntary.

At the present time, two individuals have filed actions against the City, claiming they were involuntary tested for HIV by the Medical Examiner's Office. The Medical Examiner's Office reports that one action has been dismissed in a summary judgment but is on appeal. The second action, an Equal Employment Opportunity claim, is pending.

Even though one case was dismissed, the individual who filed suit still has the right to appeal the judge's ruling on the summary judgment. Should either of the individuals prevail in their actions against the City, the City could be ordered to award damages for having failed to follow its procedures in connection with these tests.

Providing Influenza Vaccines and Screening for Tuberculosis and Other Testing

The Medical Examiner's Office participates in a surveillance program run by the TB Control Division of the City's Department of Public Health. As previously noted, the Medical Examiner's Office provides screening for tuberculosis for employees. This service is provided as a courtesy to staff members who are exposed to this disease. Investigators, Pathologists and lab workers have the most exposure to the airborne organism which causes tuberculosis. However, any employee who requests a skin test for tuberculosis, and has tested negatively in the past, can receive one.

Employees are notified of the availability of testing through a memorandum issued by the Chief Medical Examiner. The memorandum also informs employees who test positively for TB or who have had a prior diagnosis of TB that chest x-rays are available. The chest X-rays are arranged through the Administrative Coroner. The

only cost to the Medical Examiner's Office for conducting TB skin tests is the cost of the syringe and the Cost of the Chief Medical Examiner's time.

In addition to providing TB skin tests, the Medical Examiner's Office makes tetanus toxoid booster shots and flu shots available to employees. Flu shots are also made available to the Homicide Division of City's Police Department. Immunization is voluntary but highly suggested by the Chief Medical Examiner in specific cases.

Tetanus toxoid booster shots are recommended for all employees who, as part of their duties in the Medical Examiner come into contact with sharp objects such as razors, needles, or glass, or who work in areas or situations where they can abrade or cut themselves. All employees are encouraged to obtain flu shots prior to flu season. In information provided by the Chief Medical Examiner, the recommendation for flu shots stems from the public health, investigatory and disaster response responsibilities of the Medical Examiner personnel.

Informed Consent for Tuberculosis Skin Tests, Tetanus Toxoid Booster Shots and Influenza Vaccines

Unlike the state requirements for testing individuals for Hepatitis B or HIV, there are no specific requirements for informed or written consent prior to administering tests or vaccines. The initial memorandum issued by the Chief Medical Examiner to his staff, and the staff of the Crime Lab, Homicide, the Photo lab and Crime Scene Investigations for the City's Police Department, on September 20, 1996, simply states that a supply of flu vaccine has been received and anyone wanting a vaccine should contact the Medical Examiner's Office. A second memorandum circulated by the Chief Medical Examiner on October 4, 1996 fully explains the rationale for obtaining the influenza vaccine, describes the origin of the vaccine and possible adverse reactions.

Individuals receiving TB skin tests, and vaccinations as part of a physical examination or office visit to their doctor, receive information on the test or vaccine prior to having it administered. This process of providing informed consent provides the individual with information to determine whether or not they wish to subject themselves to the procedure. Additionally, it provides the doctor with some degree of protection should anything injurious happen as a result of the test or vaccination. When such tests and vaccinations are administered by a person's regular physician, or in a clinical setting, the health care worker administering the tests and vaccinations either: 1) has the individual's medical history available, has access to such records or can take the time to obtain some medical history from the individual to be tested or vaccinated; and 2) has the ability to mount procedures to counteract a severe adverse reaction to the test or vaccine administered.

The coordinator of the Influenza Program for the City's Department of Public Health, and the Visiting Nurses Association both informed the Budget Analyst staff that there have not been many problems with adverse reactions to the flu vaccine.

However, each organization also stated that there is always a possibility of a severe adverse reaction to any vaccine. To guard against any problems that may arise as a result of an individual reacting adversely to the vaccine some clinicians will ask persons receiving the flu vaccine about specific allergies.

As previously noted, written consent is not required to administer a TB skin test, or vaccination for flu or tetanus. However, as an added precaution, the Medical Examiner's Office should require that any person requesting a TB skin test or inoculation of any kind, sign and submit a consent form indicating that they are aware of the risks, and that they are voluntarily submitting to the test or inoculation. Such protocol does exist for the practice of administering flu shots.

During the field work for this audit, the Budget Analyst's staff observed the Chief Medical Examiner administering a flu vaccine. The individual being vaccinated was not asked any questions regarding allergies, nor were they observed signing a consent form. This may have been an isolated incident, as the Budget Analyst's staff does have evidence that persons receiving flu vaccinations sign a consent form. The Medical Examiner's Office should make sure a few basic medical history questions are always asked of each individual in order to determine whether or not the person requesting the vaccine should, in fact, receive the vaccination and the likelihood of the person having an adverse reaction to the vaccine. The questions could be as basic as: 1) 'Have you ever had this type of test/vaccine before?'; 2) Have you ever had an adverse reaction to this type of test/vaccine?'; 3) 'Are you allergic to any medications?'; and 4) 'Do you currently have, or have you ever had an allergy to eggs or other media used to generate a vaccine?'. Taking such actions would not be administratively burdensome and would reduce the City's exposure to legal actions which could be filed should an individual experience any adverse reaction to the test or vaccine.

Practices in Other Medical Examiner Offices in California and Selected Jurisdictions throughout the United States

As part of this audit, the Budget Analyst surveyed other Medical Examiner's and Coroner's Offices in California and throughout the United States. Federal Occupational Safety and Health Agency standards require that all employees who are at risk of contracting Hepatitis B as a result of exposure through work related duties, must be offered testing and vaccination for Hepatitis B. All of the jurisdictions surveyed are in compliance with this federal regulation. However, there were no other jurisdictions where the Medical Examiner/Coroner's Office routinely provided testing for HIV, TB skin tests, or vaccinations for influenza or tetanus toxoid boosters.

Jurisdictions that did not offer to provide HIV testing or vaccinations for employees cited numerous reasons for their practices. Most common was the opinion that an individual employee's HIV status was not of concern to the Medical

Examiner/Coroner. Los Angeles County indicated that in the case of a needle stick or exposure to blood or other body fluids, the Medical Examiner/Coroner would agree to test the decedent for HIV but not the employee. Los Angeles also does not offer flu or tetanus shots to employee's. According to the Laboratories Director for the Los Angeles County Medical Examiner/Coroner's Office, all employees who are at risk of exposure are allowed to obtain a physical examination at the County's expense. At that time, if an employee wishes to obtain a flu shot, tetanus toxoid booster, or HIV test, they may do so. However, the Director of Laboratories stated that he believes it is not appropriate for the Medical Examiner/Coroner to administer flu and other vaccines, or any personal medical services to employees.

Conclusions

The Medical Examiner's Office's current practices and procedures used to provide HIV tests for employees does not meet the written consent requirements established in the California Health and Safety Code. Additionally, the Medical Examiner's Office's practice of testing samples from living subjects, is contrary to State law. Both of these situations expose the City to legal and financial risk.

The Medical Examiner's Office also could help ensure that no potential claims are brought against the City by requiring written consent from all employees receiving vaccinations and screening for tuberculoses. While this is a significant service to employees and in actuality presents a very small risk, a change in procedure, requiring informed consent and/or written consent, would mitigate the City's exposure to legal actions and financial claims.

Overall, the Medical Examiner's Office has failed to enforce developed guidelines for testing employees and providing immunizations that comply with the regulations set forth by the State of California, and informed consent practices used by medical personnel in clinical settings. As a result, two employees have allegedly been tested involuntarily for HIV and without required written consent. Additionally, the City is unnecessarily exposed to legal actions that could result from an employee's adverse reaction to vaccinations provided by the Medical Examiner's Office.

Recommendations:

In order to comply with state code and minimize the City's risk of exposure, the Medical Examiner's Office should:

I.1 Review and consistently enforce policies and procedures for testing employees for HIV which include:

- reviewing and consistently using forms for employees to complete and sign, granting the Medical Examiner's Office permission to conduct the requested HIV test, and requiring the person administering the test to

certify receipt of the form containing the employee's signature consenting to the procedure;

- requiring the physician to have physical possession of the completed and signed consent form from the individual to be tested prior to drawing a blood sample; and

- establish a secured file to house the consent forms of individuals who are tested and maintain the completed and signed documents for a period of no less than three years as required by State law.

I.2 Establish a protocol and form which segregates samples submitted for HIV screening for living and deceased subjects and work with the Department of Public Health to obtain the appropriate authorization to submit blood samples for HIV screening that are not part of any State or Federally funded AIDS surveillance projects.

I.3 Enforce the established informed consent protocol to be administered to all employees who are either tested for or receive vaccinations for Hepatitis B.

I.4 Enforce the established informed consent protocol to be used when administering flu and all other vaccines to employees in order to reduce the City's risk of exposure to legal actions due to adverse reactions to such vaccines.

Costs/Benefits

As a result of the Medical Examiner's Office's practices with regard to HIV testing for employees, two claims have been filed against the City and County of San Francisco, alleging they were tested involuntarily for HIV in July of 1994. As of the writing of this report, the Medical Examiner's Office reports that one law suits has been filed and dismissed, in favor of the City, in a summary judgment and the other action, and Equal Employment Opportunity claim, is pending. Consequently, no monetary damages have been paid by the City with regard to these matters. By implementing the recommendations noted in this section, the City's risk of exposure from allegations of improper testing would be reduced significantly.

Additionally, the City exposure to risk resulting from adverse reactions to vaccines administered by the Medical Examiner's Office would also be reduced significantly by enforcing the established informed consent protocols. These recommendations would require a change in procedure but would not require the implementation of new testing and vaccination policies. All of the recommendations could be implemented at no cost to the City.

- To prevent the spread of infectious diseases transmitted via airborne and bloodborne pathogens, the Center for Disease Control (CDC) has developed universal precautions to be used in medical settings. Universal precautions are defined as a set of hygienic practices employed by healthcare workers that, when properly and consistently used will reduce the risk of infection to patients and staff from bloodborne and airborne pathogens. Additionally, the Federal Department of Labor, Occupational Safety and Health Administration (OSHA) issued guidelines on precautions in Occupational Exposure to Bloodborne Pathogens; Final Rule on December 6, 1991.

- Based on observations and interviews with pathologists, precautions are not generally observed in the autopsy areas of the Medical Examiner Office. For example, disposable needles and syringes are reused, instruments are not appropriately cleaned, disinfected or sterilized and protective masks, face shields and glasses are not worn during all procedures.

- Failure to observe universal precautions unnecessarily exposes staff to the possibility of contracting infections from bloodborne and airborne pathogens. Additionally, the failure to properly clean, disinfect or sterilize instruments after each procedure greatly increases the risk of contaminating specimen.

- The Chief Medical Examiner and the medical services staff should: 1) follow federal OSHA rules established in Occupational Exposure to Bloodborne Pathogens; Final Rule to prevent the transmission of HIV and other bloodborne pathogens. 2) immediately cease the practice of reusing disposable needles and syringes; 3) observe standard for sterilizing, disinfecting or cleaning, all instruments and an appropriate disinfecting solutions prior to using those instruments or surfaces for another procedure.

The Center for Disease Control (CDC) and the United States Department of Labor's Occupational Safety and Health Administration (OSHA) have established guidelines and rules, respectively, for use in medical settings to reduce and prevent the spread of HIV and other infectious diseases caused by bloodborne pathogens. Federal OSHA regulations were promulgated in December of 1991. These rules amended Part 1910 of Title 29 of the Code of Federal Regulations (CFR) by adding Section 1910.1030.

Parameters of Section 1910.1030

To provide the level of clarity needed to implement universal precautions used in reducing and preventing the spread of HIV and other infectious diseases, the CFR contains definitions that establish who is affected by these rules, what situations the CDC rules apply in, and what constitutes exposure to bloodborne pathogens. Based on the rules, as promulgated, it is not necessary to know, definitively, that HIV or any other bloodborne pathogenic microorganism is present in the human blood or human blood components to consider a surface contaminated. The mere presence, of blood, or reasonable expectation of the presence of blood, or any other potentially infectious materials on a surface constitutes contamination.

The Medical Examiner's Office is subject to Section 1910.1030 of Title 29 of the CFR since it meets many of the conditions defined in this section. The Medical Examiner's Office:

- Is a workplace where diagnostic and other screening procedures are performed on blood or other potentially infectious materials;
- Requires staff to work with contaminated objects that can penetrate the skin including but not limited to needles, scalpels, and other implements; and
- Employees are at risk of occupational exposure due to reasonably anticipated skin, eye, mucous membrane or other parenteral contact with blood, or other potentially infectious materials that may result from the performance of an employee's duties.[1]

Since these conditions exist, the Medical Examiner's Office is required, by these OSHA rules, to establish a written Exposure Control Plan that will eliminate or minimize employee exposure to potentially infectious materials and safeguard employees from accidental cuts and punctures that could transmit infectious microorganisms.

The rules and regulations also state that the employer (Medical Examiner's Office) shall provide, at no cost to the employee, protective equipment such as, but not limited to: gowns; gloves, laboratory coats, face shields, or masks; and eye protection. Although the Medical Examiner's Office is in compliance with this regulation by providing such specified protective equipment, these regulations are not enforced.

The employer is to ensure that the protective equipment is used unless extraordinary conditions exits which would prevent the delivery of health care or public safety services, or would have posed an increased hazard to the safety of the worker or co-worker. It is also the responsibility of the employer to make sure that a

[1] See Occupational Exposure to Bloodborne Pathogens; Final Rule December 6, 1991

full investigation into the circumstances preventing the use of protective equipment is held whenever an employee makes a decision not to wear such protective equipment. Steps must be taken to document the circumstances and conditions leading to the infraction of the rules, and the employer must determine whether changes can be implemented to avoid the same, or similar, circumstances and conditions in the future.

Finally, general housekeeping precepts are outlined. The CFR clearly states that employers are to keep the worksite in a clean and sanitary condition. This includes writing and implementing an appropriate schedule for cleaning the worksite and methods of decontaminating surfaces based on the location within the worksite, the type of surface to be decontaminated, the type of soil that is present and the tasks or procedures that are performed in the area.

Medical Examiner's Office's Compliance with CFR Rules and Regulations

To respond to the rules and regulations promulgated by the federal OSHA, the San Francisco Medical Examiner's Office prepared and implemented an Exposure Control Plan (ECP) that became effective May 5, 1992. Such plan was revised October 22, 1996. In this ECP, the Medical Examiner's Office: identifies all personnel that are affected by the conditions set forth in the federal OSHA standards; states that there are sanctions for non-compliance with the ECP as implemented and revised; sets forth policy and practices for the use of Universal Precautions; identifies personal protective equipment to be used in procedures; lists general safety precautions to be used in the work place; sets forth safe work practices by task; outlines general housekeeping procedures and practices; and communication of hazards to employees (e.g. labeling of containers, specimen and waste).

By developing this ECP, the Medical Examiner's Office is in compliance with the letter of the regulations. However, practices, reported by staff and observed by the Budget Analyst, indicate that compliance with the ECP is not enforced.

General Conditions on the Service Floor of the Medical Examiner's Morgue Facility

The Budget Analyst's staff requested a walk through of the facility as part of the field work for this management audit. At the time of the walk through, the Administrative Coroner stated that the facility adheres to universal infection control standards. However, the condition of the service floor and storage area did not appear to meet the standards set forth in the ECP nor those in Section 1910.1030 of Title 29 of the CFR.

The Budget Analyst's initial inspection of the service floor, including refrigeration and storage areas, raised concerns regarding general cleanliness. This initial inspection revealed that:

- The terrazzo floor was stained and had small amounts of standing fluid in some areas, and the flooring is cracked which provides a potential place for harboring bacteria;

- The outside of the stainless steel refrigeration units did not look like they had been cleaned regularly and were particularly dirty around the door handles, and gurneys and other equipment were strewn haphazardly throughout each of the refrigeration units;

- The flush disposal bowls below autopsy tables were either dirty or stained indicating that they are not currently cleaned on a regular basis, or may not have been cleaned regularly, in the past;[2]

- Three, wheeled tables were stacked with containers storing body specimen in formaldehyde, two high on the bottom shelf and three high on the top shelf and looked unstable and likely to topple if there was a significant disturbance such as an earthquake or an individual falling or bumping into the tables; and

- Three other wheeled tables were piled with blood-stained and otherwise contaminated clothing "temporarily until they can be bundled and sent over to the police evidence room."

Based on the conditions found during the walk-through of the service floor and storage area, the Budget Analyst staff concluded that sanitary conditions could be improved. Medical Examiner's Office staff also acknowledges infractions of universal precaution protocol. To their knowledge, no one on the Medical Examiner's Office staff regularly monitors adherence to universal precautions and infection control.

In a letter dated March 31, 1997 to the Budget Analyst, the Chief Medical Examiner states:

> "...My staff members are highly trained specialists. They are well aware of the necessity for and the details of universal precautions. That some of my medical staff apparently chose not to implement all recommended universal precautions is a choice they made based upon their expertise. While I do not condone these choices, I will not demean the professional capabilities of my staff by standing over them all day long to ensure that they meet the letter of every recommendation. I expect my staff to follow the precautions to the best of their clinical judgment and to report to me when and why universal precautions are not followed."

The regulations in the CFR regarding the use of protective clothing and other protective devices clearly state that the only time universal precautions should not be followed is when there is a threat to the safety of the worker or the public. The CFR also states that any time such precautions are not observed the employer is to

[2]The Department indicates that these bowls are rust stained

investigate the reason the precautions were not observed and develop alternative procedures to use in the future that will allow staff to use such precautions in the future.

Adoption of Protocols to Exercise Universal Infection Controls and Precautions

The rules adopted by OSHA are for the protection of the employees who work in environments that potentially expose those employees to bloodborne pathogens and other pathogenic microorganisms. As previously noted, to comply with the OSHA rules, the Medical Examiner's Office prepared and approved an Exposure Control Plan, effective May 5, 1992 and revised this plan, effective October 22, 1996. While the Exposure Control Plan prepared and adopted by the Medical Examiner's Office clearly addresses all of the areas of the OSHA rules, the procedures are not enforced.

The Forensic Lab Manager is responsible for ensuring that all employees adhere to the Exposure Control Plan and that universal precautions are observed. However, the Forensic Lab Manager does not routinely observe procedures in the laboratories nor monitor autopsy procedures to ensure that the pathologists are following the guidelines set forth in the OSHA rules and Exposure Control Plan. By their own admission, the pathologists do not always wear masks, do not always wear protective gowns and sleeve guards, and do not always use the recommended ten percent bleach solution for cleaning instruments. In addition to information provided by staff in interviews, the Budget Analyst's staff observed:

- Autopsy Technicians frequently leave the autopsy area in their 'greens' which are worn during autopsy procedures;
- Regulated waste (waste contaminated with blood and other body fluids) was not properly labeled or placed in red bags (indicating that regulated or possibly contaminated waste is being disposed of), or disposed of in a appropriate manner;
- Needles used to aspirate fluids are stored in the autopsy area in sponges that are sitting on counters (work surfaces) to be reused; and
- Laboratory work areas (both Toxicology and Pathology) were generally unclean.

Other concerns with regard to compliance with OSHA rules include individuals walking through the autopsy area with open beverage containers, individuals entering the autopsy area without the proper protective clothing, only rinsing instruments in water between cases, and no inspection of area or procedures to document the use or violation of universal precautions in laboratory and autopsy areas. Compliance with all applicable OSHA rules is important to decrease the risk of infection from bloodborne pathogens (specifically HIV and Hepatitis B), and other pathogenic microorganisms.

Reuse of Needles and other Sharps

The reuse of disposable needles and the methods used for cleaning and storing such needles also raised concerns. The OSHA rules for the reuse of needles clearly state:

> (vii) "Contaminated needles and other sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited. (A) Contaminated needles and other contaminated sharps shall not be recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical procedure. (B) Such recapping or needle removal must be accomplished through the use of a mechanical device or a one handed technique.
>
> (viii) "Immediately, or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:
>
> (A) Puncture resistant;
> (B) Labeled or color-coded in accordance with this standard;
> (C) Leak proof on the sides and bottoms; and
> (D) In accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps."

The current procedures used by the Medical Examiner's Office staff for cleaning needles, requires that the employee handle the needle several times removing it from, and replacing it on the syringe. Each time the needle is handled the chance of an accidental "needle stick" increases. Medical Examiner's Office staff discards the needle caps when the needle is opened for use. As such, there is no possibility of recapping the needles. Since it is the policy of the Medical Examiner's Office to reuse needles, the rules, promulgated by OSHA (mechanical device to remove needles and to recap needles, or one handed recapping) should be followed rigorously.

Inserting needles in sponges and storing those needles on counters in the autopsy area workspace does not, meet the standard set by OSHA. This practice also does not meet the CDC Guidelines for Prevention of HIV Transmission. Both OSHA and the CDC clearly state that reusable needles are not to be recapped except by mechanical means or one-handed methods, and that all needles, scalpel blades, and other sharps are to be placed in a puncture resistant container immediately after use. The CDC Guidelines for Prevention of HIV Transmission are posted in the Medical Examiner. However, the Chief Medical Examiner and the Forensic Laboratory Manager must take active steps to enforce the OSHA rules regarding reusing and recapping needles. Such steps should include:

- Only using disposable needles once prior to discarding them in an appropriate manner;

- Using mechanical devices and one-handed techniques for removing reusable needles from syringes, and also using mechanical devices or proper one-handed techniques for recapping reusable needles; and

- Properly disassembling, cleaning and sterilizing syringes that are to be reused for subsequent procedures.

Information obtained from San Jose Surgical Supply Company indicates that the Medical Examiner's Office could implement a policy of discarding disposable needles after each use for a cost of approximately $9,948 annually. This estimate is based on quantities and prices shown in Table II.1.

Table II.1
Estimated Cost of Disposable Needles and Syringes

ITEM	QUANTITY	COST PER ITEM	TOTAL
10 cc Syringes	10,000	$18.40/100	$1,840.00
30 cc Syringes	10,000	$24.00/50	4,800.00
16 Gauge Needles	5,000	$12.00/100	600.00
18 Gauge Needles	5,000	$5.65/100	282.50
20 Gauge Needles	5,000	$5.65/100	282.50
22 Gauge Needles	5,000	$5.65/100	282.50
23 Gauge Spinal Needles	1,500	$62.00/50	1,860.00
Total			$9,947.50

Information obtained from San Jose Surgical Supply based on January 1997 prices

The Chief Medical Examiner indicates that implementing a policy of using disposable needles only once and discarding them after that use also will increase expenditures for sharps disposal. In addition to the estimated $9,948 for the needles and syringes, costs for sharps containers and a disposal contract must be considered. Under the current practice, the Medical Examiner's Office can obtain a permit as an entity that disposes of less than 20 pounds of waste per week. Under the proposed practice, the Medical Examiner states that a contract for the disposal of medical waste would be required as the amount of wasted discarded would exceed the 20 pound limit.

Disposal of Regulated Waste

Additionally, the manner in which potentially infectious biologically hazardous waste is discarded does not appear to meet the set standards. The OSHA regulations on the disposal of contaminated or "regulated" waste is very clear. In fact, OSHA has differentiated between the disposal of contaminated sharps and other waste.

The Medical Examiner's Office is generally in compliance with the regulations regarding the disposal of contaminated sharps. However based on information obtained from the Medical Examiner's Office staff and observations by the Budget Analyst's staff, the Office should ensure that it is in compliance with regard to the disposal of "other regulated waste". The regulation specifically states:

> "...Regulated waste shall be placed in containers which are:
> (i) Closable;
> (ii) Constructed to contain all contents and prevent leakage of fluids during handling, storage transport or shipping;
> (iii) Labeled or color coded in accordance with paragraph (g)(1)(i) this standard; and
> (iv) Closed prior to removal to prevent spillage or protrusions of contents during handling, storage, transport or shipping.
> "
>
> If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:
> (i) Closable;
> (ii) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
> (iii) Labeled or color coded in accordance with paragraph (g)(1)(i) of this standard; and
> (iv) Closed prior to removal to prevent spillage or protrusions of contents during handling, storage, transport or shipping.
>
> "Disposal of all regulated waste shall be in accordance with the applicable regulations of the United States, States and Territories."

The Medical Examiner's Office currently disposes of waste from the autopsy area in grey garbage sacks. These sacks are filled with refuse from the medical procedures (Intravenous Bags, catheters, and other evidence of medical procedures), along with other waste from the autopsy area. These bags are then removed by the Forensic Autopsy Technicians.

According to the State of California regulations for the disposal of biologically hazardous waste, any waste that is contaminated with biologically hazardous materials, must be disposed of in an appropriate manner. While the definition of contaminated waste differs, the intent does not. All waste must be identified and tagged prior to disposal. Additionally, the materials must be disposed of in a container, or containers that remain clearly marked. Transport of such waste must be made by duly licensed and regulated disposal contractors, or by agencies holding the appropriate permits.

Again, it is incumbent upon the Chief Medical Examiner to ensure that his staff is in compliance with all state and federal regulations regarding the disposal of all materials that are potentially contaminated with biologically hazardous waste.

Compliance can be accomplished by properly tagging waste and completing the applications for the appropriate disposal and transport permits.

It should be noted that the Environment Health Division of the Department of Health inspected the Medical Examiner's Office facility and conducted a cursory review of disposal practices. During the site visit, the service floor (autopsy area) was in use and the inspector met with the Medical Examiner's Office Laboratory Manager who stated that there was no disposal of regulated waste in grey trash bags and that "medical waste" is transported to San Francisco General Hospital, and disposed of in an appropriate manner. This information is a direct contradiction of the information provided by staff that perform procedures in the autopsy room.

The Budget Analyst requested a list of all contracts the Medical Examiner's Office has for outside services. The list provided does not include a contract for the removal of regulated or medical waste. The Medical Examiner's Office admits that it does not have the appropriate permits to transport medical waste and thus, is not in compliance with the California Medical Waste Disposal Act. However, the Medical Examiner's Office is working with Environmental Health to obtain the proper permits and bring its waste transport and disposal into compliance.

*General Housekeeping^*

As previously noted, the general conditions on the service floor of the Medical Examiner's Office revealed a lack of cleanliness. The conditions listed above may indicate the Medical Examiner's Office is not cleaning thoroughly or frequently enough. The OSHA rules generally state:

- "Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present and tasks or procedures being performed in the area."

- "All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials." and

- "Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning."

The Budget Analyst's initial inspection of the service area of the Medical Examiner established that the area is not cleaned and decontaminated on a daily basis. Also, while the Medical Examiner's Office has developed an Exposure Control Plan, that plan does not contain a cleaning schedule with sufficient detail. For example, the plan reads,

> "[t]he walls of the autopsy room shall be cleaned frequently, whenever they are dirty. The half, made of Formica, shall be washed with disinfectant solutions at least once a week. A build-up of dirt, grime and blood stains occurs commonly along the bases of the cabinets, walls and doors as well as in the corners and under each autopsy table. Particular attention shall be paid to these areas as they are a potential source of contamination that can be spread and which can expose personnel to pathogens."

These instructions for cleaning the autopsy room walls and the build-up of grime and blood stains do suggest frequent, or "at least weekly" cleaning. However, this is not a specific schedule which staff can easily follow. Also the only section that specifies the type of disinfectant cleaning solution that should be used in the section pertaining to the cleaning of the laboratories and laboratory equipment. Other sections, (laboratory glassware, isolation room and isolation room equipment, autopsy room and equipment, etc.) simply note that a strong, or appropriate disinfectant should be used.

In order to advise staff of housekeeping requirements in a clear and precise manner, a schedule should be developed that specifies:

- The days on which cleaning is to occur. For example: 'Each Wednesday afternoon, the Formica walls in the autopsy room are to be washed. The remaining portion of the walls in the autopsy room are to be washed the third Wednesday of each month, and any time there is visible soil.'

- The types of cleaning solutions and disinfectants that should be used. For example: 'The Formica walls should be washed with a solution of alconox and water. This cleaning solution shall be mixed at a ratio of 1/4 cup alconox to 3 gallons of hot water.' and

- The steps in the cleaning process. For example: "The walls are to be washed with the solution of alconox and water until all visible signs of soil have been removed. The initial washing should be followed with a second washing with the same solution. The walls should then be rinsed with clear, hot water, sprayed with a disinfectant and left to air dry.'

Additionally, the schedules should indicate who is responsible for completing each task, who is to supervise and the level of supervision to be provided, and who is

responsible for inspecting areas to make sure that all of the cleaning tasks are accomplished as scheduled.

Adherence to the procedures outlined in the revised Exposure Control Plan must be verified through the implementation of inspections of work areas, and observations of pathology and laboratory staff during autopsy and laboratory procedures. The inspections should be conducted on both a scheduled and unscheduled basis. Scheduled inspections should be used to determine what types of changes in housekeeping, medical, and laboratory testing protocols should be made in order to make adhering to universal precautions as easy as possible. The unscheduled inspections should be use to verify that all stated protocols are being followed and that universal precautions are being used at all times.

Impact of Current Practices on Samples Used as Evidence

Universal precautions have been developed and are implemented to reduce the risk of infections spread by bloodborne pathogens and other pathogenic microorganisms from patient to patient, or staff to patient. In medical examiner and coroner offices, the risk of infection is to employees as opposed to living patients, and from staff to staff. In addition, failure to properly clean and sterilize instruments used to obtain samples and conduct toxicology tests could affect the quality of samples used in such tests.

In order to properly clean autopsy room equipment, and especially needles and syringes, the entire device must be disassembled. Disassembling the equipment is time consuming and exposes staff to the risk of infection through needle sticks, scrapes and cuts.

Medical Examiner's Office staff reports that scalpels, needles, syringes and knives are not always properly cleaned between cases. Pathologist stated that this can lead to the possibility of contaminating samples when moving from one case to the next. Such contamination could become a significant issue in cases where legal actions are pending. For example, blood samples from Case 'A' that are contaminated with blood or other fluids from Case 'B' could falsely indicate the presence of a substance. It is also possible that chemicals and disinfectants used to clean equipment, such as syringes and needles, could skew the results of some toxicological tests.

The Chief Medical Examiner states that the possibility of such contamination is remote. While this may be true, in a high profile case, the Defense Bar need only suggest that the protocol used in the autopsy room and laboratory provide the opportunity for contamination. This could be enough to seriously jeopardize the District Attorney's ability to successful prosecute a case.

The Budget Analyst has not found any instance where such contamination has taken place. However, such instances have occurred in other jurisdictions. Adopting more stringent protocol with regard to the cleaning and sterilization of

autopsy room and laboratory instruments would greatly reduce, and possibly eliminate, the possibility of such an occurrence.

Conclusions

The United States Department of Labor's Occupational Safety and Health Administration, and the Center for Disease Control have issued rules and guidelines for the prevention of HIV transmission, and other bloodborne pathogens and pathogenic microorganisms. These rules were promulgated to safeguard employees who are required to work under conditions where the possibility of contamination exists. In order to comply with these rules and guidelines, the Medical Examiner developed and approved an Exposure Control Plan to be used by the staff.

Based on the observations of the laboratories and autopsy area, and despite the development and approval of an Exposure Control Plan, the Budget Analyst has concluded that the standards specified by OSHA and the CDC are not strictly adhered to and that the Medical Examiner's Office could improve the sanitary conditions of the facility. The lack of adherence to universal precautions with respect to using protective clothing and masks, as well as the failure to properly clean disinfect or sterilize instruments and work areas, is further evidence of the Medical Examiner's laxity in enforcing the approved Exposure Control Plan.

The failure to adhere to universal precautions and the approved Exposure Control Plan increases the risk of exposure to bloodborne pathogens and other pathogenic microorganisms in the work environment. Increased exposure to bloodborne pathogens and other pathogenic microorganisms result from the conditions found in the autopsy, storage and laboratory areas of the Medical Examiner's Office.

In order to reduce the risk of exposure faced by employees, the Medical Examiner's Office should devise a plan to conduct inspections of all work areas where exposure and contamination could occur to ensure that all employees are observing the OSHA regulations regarding protective equipment, clothing and procedures. The inspections also should include monitoring general housekeeping to ensure that the service floor and storage areas are sanitary, and verification that all biologically hazardous waste is properly discarded and disposed of in a manner that is consistent with state regulations. Additionally, the Medical Examiner's Office should implement new policies with regard to the reuse of needles and syringes and strictly enforce the OSHA regulation on the recapping of needles.

Recommendations

To ensure that all protocol adhere to the Universal Precautions outlined in the OSHA rules regarding Occupational Exposure to Bloodborne Pathogens, promulgated December 6, 1991, the Medical Examiner's Office should:

II.1 Enforce established protocols and generally adhere to the universal infection control and sanitary condition standards that are outlined in the Code of Federal Regulations publication announcing the OSHA rules.

II.2 Actively enforce the OSHA rules regarding the reuse of syringes and recapping of needles by:

(a) instructing staff that the practice of storing needles in sponges is not in keeping with universal precautions;

(b) developing a protocol for cleaning and disassembling reusable needles that does not require staff to touch the needle with their hands;

(c) using disposable needles once and properly discarding such needles after that one use; and

(d) developing a protocol to recap reusable needles with a mechanical device or instructing staff on using a one-handed method for recapping reusable needles.

II.3 Comply with all State and Federal regulations regarding the disposal of regulated waste and develop a method of providing proof of such compliance. Proof could be obtained by:

(a) implementing a spot inspection and observation program for the autopsy and laboratory areas of the Medical Examiner's Office to verify compliance with regulated waste disposal rules;

(b) preparing a clearly written protocol that can be easily posted in the autopsy room, toxicology and pathology laboratories; and

(c) working with Environmental Health to obtain the required transport permits.

II.4 Revise the Housekeeping section of the Exposure Control Plan to include a specific schedule for cleaning all areas and equipment on the service floor of the Medical Examiner's Office and laboratories. The revisions should include:

(a) the days on which specific cleaning tasks are to occur and also the frequency of the cleanings;

(b) the specific type of disinfectant that is to be used and the specific concentration of the disinfectant mixture;

(c) the steps to be used in cleaning and disinfecting each type of surface and equipment; and

(d) the method of finally sanitizing and drying each type of surface and equipment.

II.5 Assign specific staff to supervise and ensure the cleaning of specific areas of the service floor and develop a schedule for inspecting the service floor, including laboratories, to verify compliance with universal infection control and sanitary conditions, outlined in the OSHA Occupational Exposure to Bloodborne Pathogens; Final Rule dated December 6, 1991.

Costs/Benefits

Adopting a policy to use disposable needles once prior to discarding them could be implemented at an estimated annual cost of $9,950. Based on financial data obtained from the FY 1995-96 year-end reports, these expenditures could be absorbed within the existing budget.

Complying with the OSHA regulations and CDC guidelines for observing universal precautions, the City can reduce its risk of accidental infections caused by needle sticks and other forms of inoculation (e.g. touching contaminated surfaces, splatter from blood and other body fluids, etc.). Reducing the risk of accidental infection also reduces the potential for legal actions, filed by employees who are accidentally inoculated with bloodborne pathogens and other pathogenic microorganisms found in their work place.

- **The National Association of Medical Examiner's, the Society of Forensic Toxicologists, and the American Academy of Forensic Sciences have established guidelines for the accreditation of forensic toxicology laboratories. These guidelines state that an accredited forensic toxicology laboratory should be directed by a chief toxicologist to: 1) provide overall management of the laboratory; 2) supervise laboratory staff; 3) validate new drug assays; and 4) maintain a quality assurance program.**

- **The San Francisco Medical Examiner's Office currently does not have a chief toxicologist who provides an appropriate level of supervision and day to day management of the Toxicology Laboratory, and has not had such a position since 1993. As such, the San Francisco Medical Examiner's Office does not fully conform to the guidelines established by the professional associations recognized for setting the standards used to accredit forensic toxicology laboratories.**

- **The Chief Medical Examiner should comply with the guidelines and standards established by the professional organizations for forensic toxicology by: 1) reinstating the chief toxicologist position to provide overall management of the laboratory and supervise staff; 2) developing a program for cross-training toxicology laboratory staff, which includes proper techniques and procedures for performing specific tests and utilizing equipment, 3) updating and completing fundamental operating procedures to meet established standards; and 4) provide guidance in developing a quality assurance program that includes adequate case review that is tied to the chain of custody process.**

Background and Overview

Toxicology is the analysis of substances (drugs, alcohol and chemicals) found in biological samples, extracted from living and deceased individuals. Forensic toxicology is distinguished in that the reasons for conducting the analyses and/or the outcome of those analyses could potentially have some bearing on legal or judicial matters. The San Francisco Medical Examiner's Office has been accredited by the National Association of Medical Examiners since 1974. Since the Toxicology Laboratory is part of the facility, the accreditation extends to the laboratory. The San Francisco Medical Examiner's Office provides comprehensive forensic toxicology services that assist in determining, or provide verification of, the cause and manner of death for cases under the Medical Examiner's jurisdiction. The Medical Examiner's Office toxicology laboratory also provides support services for the San Francisco Police Department by: 1) analyzing alcohol and other drug and chemical substances in biological fluids seized from motor vehicle drivers under the DUI program; 2) analyzing biological fluids seized from suspects arrested for possession or under the influence of drugs under the 11550 program; and 3) analyzing specimen collected from recruits of the Police and Fire Departments.

Organizationally, the Toxicology Laboratory is part of the Medical Services Program of the Medical Examiner. The Fiscal Year 1996-97 approved budget for Medical Services is $1,485,920. Of the total approved budget for Medical Services, the Budget Analyst estimates that $497,041 is allocated for Toxicology. This level of funding ($497,041) includes salaries and fringe benefits for 5.5 FTEs which include: 1.0 FTE Forensic Lab Technician; 3.0 FTEs Assistant Forensic Toxicologist Is; 1.0 FTE Assistant Forensic Toxicologist II; 0.5 FTEs Forensic Laboratory Manager. Also included in the funding is $7,053 in temporary salaries and $42,041 in various non-personnel costs (see Section IV: Budget and Section VI Organization and Staffing for detailed information on staffing and budget).

The Assistant Forensic Toxicologist II position was created during 1988 and modified to assume additional supervisory responsibilities in Fiscal Year 1993-94. These changes were made to provide a lower-level non-management position that can supervise some of the functions in the Toxicology Laboratory. The creation of this position was in response to the elimination of the Forensic Toxicologist position as part of the Fiscal Year 1993-94 budget process.

Guidelines for Accreditation of Forensic Toxicology Laboratories

The National Association of Medical Examiner's (NAME), the Society of Forensic Toxicologists and the American Academy of Forensic Sciences have established and recognized guidelines for the accreditation of forensic toxicology laboratories. Each of these professional organizations has established that an accredited forensic toxicology laboratory is to be directed by a Forensic Toxicologist, who meets certain educational and experience requirements The Forensic Toxicologist is to:

- Provide overall management of the laboratory;
- Supervise laboratory staff;
- Validate new drug assays; and
- Maintain a quality assurance program.

In addition, the American Board of Forensic Toxicology, Inc., Laboratory Accreditation Manual contains standards for management and administration, personnel, standard operating procedure manuals, security and chain of custody of specimen, quality assurance and quality control, analytical procedures such as immunoassays and Chromatography/Spectrometry protocols and calibrations, data review and safety. These standards and guidelines are appropriate for:

Post-Mortem Forensic Toxicology, which determines the absence or presence of drugs and their metabolites, chemicals such as ethanol and other volatile substances, carbon monoxide and other gases, metals, and other toxic chemicals in human fluids and tissues, and evaluates their role as a determinant or contributory factor in the cause and manner of death;[1]

Human Performance Forensic Toxicology, which determines the absence or presence of ethanol and other drugs and chemicals in blood, breath or other appropriate specimens, and evaluates their role in modifying human behavior. (The analysis of ethanol in breath, although important, was not considered by the committee because such tests are not conducted in a laboratory setting:[2] and

Forensic Urine Drug Testing, which determines the absence or presence of drugs and their metabolites in urine to demonstrate prior use or abuse. (Because this subject has been covered by the Department of Health and Human Services Guidelines and by the College of American Pathologists Accreditation Program, it was not discussed further by the committee and [is not discussed in the Guidelines][3].

The San Francisco Medical Examiner's Office engages in all three of these defined areas of toxicology. As such, the guidelines should be applied to the toxicological testing conducted in the Medical Examiner's Office Toxicology Laboratory in order to ensure the integrity and quality of the results.

The specific guidelines set standards and conditions for: operating procedures which include, personnel, samples and receiving, and security and chain of custody; analytical procedures which include review of data, and quality assurance; reporting of results; and safety. Our analysis of documents from the Medical Examiner's Office, interviews with staff and observations of procedures revealed that the Medical Examiner's Office in not in compliance with these SFT/AAFS guidelines.

[1]See Forensic Toxicology Laboratory Guidelines c. 1991; published by the Society of Forensic Toxicology and the American Academy of Forensic Sciences, based upon the work of the Laboratory Guidelines Committee of the Society of Forensic Toxicologists. pg. 1
[2]Ibid., pg. 1
[3]Ibid., pg. 1

Elimination of the Forensic Toxicologist Position in the San Francisco Medical Examiner's Office

The SFT/AAFS guidelines for toxicology laboratory personnel state:

> 'The forensic toxicology laboratory shall be directed by a person who is qualified by reason of appropriate education and experience to assume the required professional, organizational, educational and administrative responsibilities.[4]

At this time, the San Francisco Medical Examiner's Office is not staffed with a Forensic Toxicologist. This position was eliminated during the Fiscal Year 1993-94 budget process, on the initiative of the Medical Examiner's Office, and later replaced with an Assistant Forensic Toxicologist II position. The management and supervisory duties were assumed by the Chief Medical Examiner. The Chief Medical Examiner appears to be qualified under the SFT/AAFS guidelines to manage the laboratory. However, the Budget Analyst does not believe that, given his other duties, the Chief Medical Examiner has sufficient time to provide the level of supervision and oversight specified in these guidelines. The technical duties, previously performed by the Forensic Toxicologist, are carried out by the Assistant Forensic Toxicologist II. These duties include:

- Conducting the more complex toxicological studies for forensically significant drugs on blood, urine, and other physiological specimens from both decedents and individuals suspected of violating the law;
- Using gas and thin-layer chromatography, ultraviolet, and visible and fluorescent spectrophometry;
- Conducting various toxicological procedures as needed; and
- Operating a quality assurance program which evaluates data and ensures the accuracy of the work produced and technical proficiency of the laboratory.

Due to the elimination of the Forensic Toxicologist position during the 193-94 budget process, the direct management of the toxicology laboratory has been assumed by the Chief Medical Examiner. As previously noted, the Chief Medical Examiner does appear to be qualified to manage the laboratory based on the SFT/AAFS guidelines. However, based on the Budget Analyst's observations and staff interviews, it is estimated that the Chief Medical Examiner spends less than five hours per week in the laboratory. After the release of the draft report, toxicology staff submitted letters indicating that the Chief Medical Examiner may

[4]Ibid., pg. 2

spend as much as 20 hours per week in the laboratory. In a letter dated March 27, 1997, the Assistant Toxicologist II states:

> "...in my experience the Chief Medical Examiner spends approximately 20 hours per week including nights and weekend and early morning hours in the laboratory to ensure accurate reports, equipment maintenance, and the preparation of procedural manuals and quality control review."

Despite this statement, the Budget Analyst still believes that the time spent in the laboratory on nights and weekends and early morning hours does not provide the supervision and oversight required to ensure the quality of work performed by the laboratory staff. The estimated time the Chief Medical Examiner spends in the laboratory during business hours is not sufficient to provide the level of supervisory and administrative oversight required to: 1) ensure that the laboratory personnel are adequately trained and experienced enough to conduct the required work; and 2) ensure that the work performed is accurate, thereby monitoring the competency of the staff, including the Assistant Forensic Toxicologist II, and verifying their skill level. Additionally, the protocol for reviewing test data results, chain of custody protocols, and quality assurance could be improved.

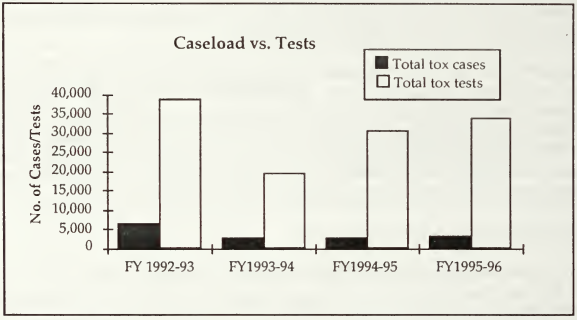
The development of standards, operations manuals, protocols, staff training and evaluation, and quality assurance is the responsibility of the Forensic Toxicologist. These problems are exacerbated by staff from Pathology and Toxicology believing that there is a lack of leadership and supervision in the Toxicology Laboratory. As such, the Budget Analyst has concluded that the continued absence of a strong management and supervisory presence in the San Francisco Medical Examiner's Office Toxicology Laboratory, is attributable to eliminating this position.

Disproportionate Testing of Toxicology Cases

Immediately upon the elimination of the Forensic Toxicologist position the annual case load for the Toxicology Laboratory dropped by 3,969. This reduction was primarily the result of the elimination of all Adult Probation drug testing in Fiscal Year 1993-94. The current supervisor in Adult Probation, who is responsible for most of the drug testing, reports that as a result of eliminating the Forensic Toxicologist position, the Medical Examiner's Office no longer has sufficient staffing to perform the urinalysis for Adult Probation. Consequently, all Adult Probation urine samples are analyzed by a private laboratory at a cost of $5.00 per sample. Adult Probation also stated that this is approximately $2.00 more per sample than the Medical Examiner charged. With an average annual caseload of 3,500 this represents an additional $7,000 in costs for Adult Probation drug testing. In addition to the elimination of Adult Probation drug testing, the Fiscal Year 1993-94 Quarterly Reports, prepared by the Medical Examiner indicate that there were 178 fewer Medical Examiner's cases requiring some level of toxicological testing .

Despite the reduction of 3,969 cases, from Fiscal Year 1992-93 to Fiscal Year 1993-94, which represents a 58.8 percent reduction, the average number of tests per case began to increase in FY 1993-94. Records maintained by the Medical Examiner's Office show that the Toxicology Laboratory began conducting more tests, proportionately, than it had conducted under the supervision of a Forensic Toxicologist. The divergence between the number of toxicology cases and the number of toxicology tests performed continues to increase through Fiscal Year 1995-96. This is illustrated in Table III.1 which tracks the Medical Examiner's Office caseload that has remained relatively constant over the past three fiscal years, increasing by 633 cases or 22.79 percent, and the actual number of toxicology tests conducted on those cases, increasing by 14,298 tests, or 73.05 percent.

Table III.1
Toxicological Cases Compared to Toxicological Tests Performed



Source: Quarterly Reports prepared by the San Francisco Medical Examiner from Fiscal Years 1992-93 through 1995-96.

For Fiscal Years 1993-94, 1994-95 and 1995-96, the Medical Examiner's Office reported 2,777, 3,024 and 3,153 toxicology cases, respectively. In contrast the actual number of tests conducted for the same three fiscal years were 19,573, 30,606 and 33,871 respectively. This raises the average number of tests per case from seven tests per case during Fiscal Year 1993-94 to ten tests per case during Fiscal Years 1994-95 and 11 tests per case in FY 1995-96. In contrast, during Fiscal Year 1992-93, the last fiscal year in which there was a Forensic Toxicologist, the Medical Examiner's Office reported 6,746 toxicology cases requiring 38,945 tests. This represents an average of 6 tests per toxicology case. Reinstating the Forensic Toxicologist position would provided a greater level of management and oversight in the Toxicology Laboratory and could result in a reduction in the number of toxicology tests conducted.

Comparison of San Francisco to other Jurisdictions

To compare the number or toxicological tests conducted in the San Francisco Medical Examiner's Office Toxicology Laboratory with other jurisdictions in California, the Budget Analyst examined the activity of toxicology laboratories in Santa Clara County, Alameda County, and Los Angeles County for Medical Examiner/Coroner cases for Fiscal Year 1995-96. To determine the number of Medical Examiner's toxicology cases for the City and County of San Francisco, the Budget Analyst relied on the Toxicology Laboratory staff's determination that 75 percent of the work conducted is related to Medical Examiner cases as opposed to DUI, Penal Code (PC)11550 and other toxicological testing. As such, approximately 25,403 of the 33,871 tests conducted, represented work performed for the 1,782 Medical Examiner Cases. The following table provides a comparison of the number of Medical Examiner cases, toxicological tests performed and the average number of tests per case for each of the above mentioned jurisdictions.

Table III.2
Comparison of the Number of Toxicological Tests Performed for Medical Examiner Cases for Selected California Jurisdiction During Fiscal Year 1995-96

FY 1995-96	Santa Clara Co.	Alameda Co.	San Francisco Co.	Los Angeles Co.
Number of Medical Examiner Toxicology Cases	591	624	1,782	5,493
Number of Toxicology Tests	1,561	1,761	25,403	28,426
Avg. Number of Tests Per Case	2.64	2.82	14.26	5.17

Note: For the purposes of this comparison, each jurisdiction equated one extraction to be the equivalent of one test. According to the lead toxicologists from the above mentioned laboratories, it is an inadequate measure to determine the average number of tests per case based on the number of cases and the number of tests. This is due to the variance in the testing required based on the type of case (e.g. homicide, suicide, accident, or natural) the complexity of the case, and the types of screens (analyses) each lab uses. The Budget Analyst acknowledges this limitation. However, absent any detailed information on the tests conducted by type of case, this is the best overall measure that can be used to compare the work in different jurisdictions.

Table III.2 shows that the San Francisco Medical Examiner's Office is performing almost five times as many tests per case as Santa Clara and Alameda Counties, and almost three times as many tests per case as Los Angeles County. Increased testing requires additional staff and increases the costs of operation for Toxicology. According to the Medical Examiner's Office staff, and assessments from independent toxicologists, the disproportionately high number of tests is attributable to a lack of communication between the pathologists and the Assistant Forensic Toxicologists,

and a lack of review by a chief toxicologist or other qualified and authorized staff, of the toxicological tests requested and the actual toxicology test request forms. A review process would provide a forum for the pathologists to discuss the case with the Forensic Toxicologist, to determine the types of tests that should be conducted to obtain the required information and the most efficient method of conducting those tests. As previously noted, this could also lead to a reduction in the number of toxicological tests conducted.

By implementing a review process, the San Francisco Medical Examiner's Office could conduct more efficient toxicology testing and assure that the tests conducted for each case are the most appropriate given the information that is needed to determine, or verify, the cause of death and contributing factors. The review process would include discussions between the lead toxicologist and the pathologist requesting the tests and a review of the Request for Toxicology Examination form submitted by the pathologist.

Changes in the Types of Toxicological Testing Requested

There also have been changes in the types of toxicological tests requested. Toxicology request forms used in the San Francisco Medical Examiner's Office are based on three pre-set screens, or groupings of tests. The three pre-set screens used in the San Francisco Medical Examiner are:

- An 'A' screen which tests for ethyl alcohol and other volatiles such as acetone and methanol;
- A 'B' screen which tests for chemicals included in the 'A' screen plus barbiturates, hypnotic-sedatives, benzodiazepines, and methaqualone; and
- A 'C' screen which is a comprehensive screen that tests for chemicals included in both the 'A' and 'B' screen plus cocaine, morphine-type alkaloids, tricyclics and analytically related compounds, and phenothizine.

These screens were developed in the 1970's, and reflect the drugs commonly tested for during that time. Since the development of these screens, there have been changes in the patterns of drug abuse and testing needs. For example, our limited sample of 50 cases between 1993 and 1996 did not include any requests for the 'B' screen that was developed to detect benzodiazepines and methaqualone, along with alcohol, other volatiles and barbiturates. Forensic toxicologists in private laboratories in the San Francisco Bay Area and other jurisdictions in California stated that this is a phenomenon of changes in the use of such drugs. Since these drugs are no longer common drugs of abuse, the need to maintain a separate pre-set screen to test for their presence no longer exists.

Table III.3 Limited Sample of 50 SFME
Toxicology Cases from CY 1993 through CY 1996
by Type of Toxicology Test Screen Requested

Number of Toxicology Tests by Type	1993	1994	1995	1996	Total
A Screen	1	0	0	2	3
B Screen	0	0	0	0	0
C Screen	7	4	8	7	26
Other Tests	2	0	0	0	2
No Tests	3	8	5	3	19
Total	13	12	13	12	50
Percentage of Toxicology Tests by Type					
% A	8	0	0	17	6
% B	0	0	0	0	0
% C	54	33	62	58	52
% Other	15	0	0	0	4
% No Tests	23	67	38	25	38

Source: Medical Examiner's Toxicology Laboratory Log Book entries from 1993 through 1996

A review of fifty case files from 1993 through 1996 revealed that 32 of the cases required some type of toxicological testing. Of the 32 cases requiring testing, 26, or 81.25 percent, of the cases were tested using 'C'; screens. A total of 716 tests were run to complete theses 'C' screens, or an average of 27.54 tests per case. The sample of cases that included 'C' screens for toxicological testing included 3 homicides, 5 suicides, 5 naturals, 7 accidents, and 6 undetermined findings as the manner of death. The remaining 6 cases required 'A' screens and specifically requested tests for "other drugs of abuse". Table III.3 above shows the distribution of the toxicology screens requested for the sample selected and the overall percentages of tests compared to cases.

The Budget Analyst acknowledges the Chief Medical Examiner's concern about the small sample used to analyze the toxicology tests conducted by the Medical Examiner's Office. The Budget Analyst is not drawing any causal inferences from this data and is simply noting the type of work performed. From a statistical perspective, a sample size of N=30 is statistically valid. However, a sample size of N=30 may not provide any statistically significant results. As such, the limited sample of 50 cases used for this analysis may show trends and is statistically valid. This trend is not stated with a high degree of statistical confidence, nor does the Budget Analyst claim that this limited sample is sufficient to provide any statistically significant results.

In total, the 32 toxicology cases required 835 tests. Based on this total, 85.75 percent of the tests conducted are related to requests for the comprehensive analysis provided by the 'C' screen. By comparison, the San Diego County Medical Examiner's Toxicology Laboratory, a comparable jurisdiction, reports that only 20 percent of the tests conducted are 'Comprehensive', which is the equivalent of San Francisco's 'C' screen, and Los Angeles County reports that approximately 27 percent of the Coroner's toxicology cases require a 'C' or 'Extended C' screen.

The Chief Toxicologist in San Diego reported that the cost and time required to provide the analysis from comprehensive, or 'C' screens warrants limiting their use. For example, at an average cost of $300 per 'C' screen, for the same sample of 32 cases, San Diego would expend $1,800 to conduct the tests, Los Angeles would expend $2,700 to conduct the tests, and San Francisco would expend $7,800 to conduct the tests. Based on this analysis, it is costing the City three to four times as much to conduct the same type of toxicological testing as comparable jurisdictions.

Estimating Workload and Staffing Requirements

As previously noted, there were approximately 3,153 toxicology cases during Fiscal Year 1995-96. Of these cases, 1,782 (approximately 57 percent) were Medical Examiner cases. To conduct the required toxicological analyses, the Medical Examiner's Toxicology Laboratory is staffed with the following positions at a total cost of $365,596 for salaries and fringe benefits.

• One Assistant Forensic Toxicologist II	1.0 FTE
• Three Assistant Forensic Toxicologist I's	3.0 FTEs
• One Forensic Lab Technician	1.0 FTE
• Forensic Laboratory Manager	0.5 FTE
Total	5.5 FTEs

The Medical Examiner's toxicology staff has determined that 75 percent of the tests performed in the Toxicology Laboratory are related to Medical Examiner's cases. The Assistant Forensic Toxicologist II and one of the Assistant Forensic Toxicologist I's are the only staff persons who perform toxicological tests for Medical Examiner's Office cases. As such, 36.4 percent of the staff performs 75 percent of the tests. The remaining 63.6 percent of the staff is responsible for completing only 25 percent of the tests which includes testing for DUI cases, PC 11550 cases, and urinalysis for Police and Fire Department recruits. Based on information obtained from Medical Examiner's Office staff, the toxicological testing conducted for non-Medical Examiner cases is not more difficult, nor are the tests themselves more time consuming to conduct.

Based on the reported distribution of work, the Budget Analyst considered recommending a reduction of the number of Assistant Toxicologist I positions. However, Medical Examiner staff contends that there is an excessive amount of work for the existing staff. Additionally, Pathology staff has stated that there can be a substantial period between the time toxicology tests are requested and the time results are available from the laboratory. Upon further review, and discussions with Medical Examiner's Office staff and staff at independent toxicology laboratories, the Budget Analyst's staff determined that recommending reductions in staffing would be premature given the inequitable distribution of the existing workload, and the segregation of testing responsibilities.

The uneven distribution of work is attributable to the lack of cross-training of the Toxicology Laboratory staff in: 1) performing all of the testing procedures conducted, and 2) the use of all laboratory equipment. In order to better utilize staff and effect a more equitable distribution of the entire workload in the Toxicology Laboratory, the Medical Examiner's Office should utilize the expertise of the recommended Forensic Laboratory Manager/Forensic Toxicologist to develop and implement a 12 month training program for the Assistant Forensic Toxicologist I's that will provide them with:

- The background on and knowledge of the required chemical procedures used for tests conducted in the laboratory;
- Background and training on the specific tests used to conduct all toxicological analyses; and
- An understanding of the operation of all equipment used in the laboratory to conduct such analyses.

The Forensic Laboratory Manager/Forensic Toxicologist should implement this training program within 90 days of assuming this position. The Chief Medical Examiner should make quarterly progress reports to the Director of Administrative Services on a quarterly basis as part of the current quarterly report on Medical Examiner's Office activities.

Upon completion of this training program, the workload should be redistributed in a more equitable manner, and a thorough analysis of the real staffing requirements for the Toxicology Laboratory should be conducted. To conduct the staffing analysis, actual and projected workload and performance measures should be used. These workload and performance measures should include both quantitative and qualitative measures with regard to the number of cases or tests each Assistant Forensic Toxicologist should be able to handle, the acceptable number of errors based on the quantity of work completed and the difficulty of achieving accurate results, and the number of retests resulting from positive findings, and other reasonable performance measures used by professional forensic toxicology organizations.

The Chief Medical Examiner should continue to report toxicology workload and performance statistics as part of the regular quarterly report. Six months after the completion of the training program and redistribution of work, the Chief Medical Examiner should prepare an analysis of the staffing requirements for toxicology, to be presented to the Director of Administrative Services, that justifies the retention of 5.5 FTEs based on the workload and performance data, or, based on the same data, recommends changes in the number of Assistant Forensic Toxicologists.

Should allocating the total workload in a more equitable manner and cross-training staff create greater efficiencies. allowing the Medical Examiner's Office to reduce the number of Assistant Forensic Toxicologist I positions, approximately $69,135 in annual savings would be generated for each position that was eliminated. Currently, of the Assistant Forensic Toxicologist Positions are filled. As such, the elimination of these positions and potential savings would have to be generated through attrition.

Review of Protocols and Quality Assurance

Observations of operations in the San Francisco Medical Examiner's Office Toxicology Laboratory, and interviews with the staff revealed the absence of: 1) an up-to-date general procedures manual; 2) an adequate data review of toxicological tests performed; and 3) an adequate quality assurance program to ensure that the toxicological tests are performed properly and that the results are properly reported. As previously noted, these are three fundamental accreditation requirements established by the SFT/AAFS guidelines.

Inadequate General Procedures Manual and Training

The existing general procedures manual used by personnel performing toxicological analyses is obsolete. The existing 'manual' consists of individual instruction sheets for different types of analyses and utilization of some of the equipment. These instruction sheets are made available for the staff to use. However, a complete manual that includes explanations of each analytical procedure performed in the laboratory that contains information on the theories and principles of the method of analysis used, instructions for the preparation of reagents, details of the analytical procedure (step by step instructions), instructions for the preparation of calibrators and controls, information about any special requirements for handling reagents or for ensuring safety and references for further information does not exist. The guidelines established by the SFT/AAFS also state that the procedure manual should contain detailed descriptions of the protocols for receiving, accessioning, and chain-of-custody for samples.

By failing to develop a detailed procedures manual for the toxicology laboratory, the staff must rely on experience and past practices to conduct analyses. This leads to inconsistency in protocol, a staff that is inadequately informed about routinely used

analytical and administrative procedures and isolation of duties. Each Assistant Forensic Toxicologist is assigned to a particular type of case (e.g. medical examiner, DUI, PC 11550, etc.). The specific procedures for conducting the analyses necessary to complete such tests are known only to the staff person assigned to that particular type of case. As a result, if a particular staff member is absent, the analyses required to complete the toxicological tests assigned to that individual cannot be conducted. Additionally, the failure to provide detailed information on the use of equipment leads to even greater inefficiency.

For example, in 1989 the Medical Examiner's Office purchased a 5890 Gas Chromatography/Mass selective detector (GC-MS) Series II at a cost of $75,000. This piece of equipment was purchased to perform comprehensive toxicological drug analyses. This is the newest GC-MS in the laboratory and it is the only instrument that is programmed to analyze biological samples for benzodiazepines, methaqualones, and amphetamines. The analyses of the above mentioned classes of drugs are included on the 'C' screens, which as previously noted are requested in up to 75 percent of the Medical Examiner's toxicology cases, or an estimated 81.25 percent of the total number of toxicological tests performed. The Assistant Forensic Toxicologist II is the only staff member who has been trained to utilized this GC-MS. There are no detailed instructions on the operation of this piece of equipment nor the tests that are performed using this particular GC-MS. Consequently, about 75 percent of the Medical Examiner's toxicology cases, or 81.25 percent of all the toxicological tests performed, can only be completed by one staff person.

The most efficient solution to this situation is the cross-training of staff so each person is familiar with the operation of all equipment and conducting all types of analyses. Such cross-training is also indicated in the SFT/AAFS guidelines. However, in the absence of the recommended training program, competent staff with adequate technical laboratory skills could follow the instructions in the procedure manual and complete the required testing. With no cross-training, and no procedure manual, it takes a longer period of time to complete toxicological analyses. The current estimate for completing a Medical Examiner's cases, which are all signed out pending toxicology and pathology test results, is nine days. Full utilization of staff and equipment and the development and use of a laboratory procedures manual could significantly reduce the amount of time required to complete the required toxicological examination, leading to a shorter period of time needed to complete cases.

Quality Assurance

As previously noted, the Medical Examiner's Office is not required to obtain separate accreditation. Nevertheless, we feel that the SFT/AAFS guidelines contain useful suggestions to improve the Medical Examiner's Office's operations. SFT/AAFS guidelines state that a quality assurance program encompasses all aspects of the toxicological analysis process, from specimen collection and reception through analysis, data review and reporting results. The objective of a quality

assurance program is to detect error, whether random or systematic, and to initiate appropriate remedial actions when errors are discovered. Quality assurance is important in forensic science disciplines, such as forensic toxicology, because the results of toxicological analysis are subject to challenge in the justice system.

The guidelines have clearly defined 'standards', 'calibrators', and 'controls' which are the three major components used in developing a quality assurance program. These three components have been defined as follows:

> **Standard**, a reference material possessing one or more of the properties that are sufficiently well established that calibrators can be prepared;
>
> **Calibrators**, either prepared from the reference material or purchased, are sued to calibrate the assay. Where possible, calibrators should be prepared in a matrix similar to that of the specimen; and
>
> **Controls**, either prepared from the reference material (separately from the calibrators; weighed or measured separately), purchases, or obtained from a pool of previously analyzed samples. Controls from all three of these sources are used to determine the validity of the calibration; that is the stability of a quantitative determination over time. Where possible, controls should be matrix-matched to specimens and calibrators, as indicated above[5]

In addition to these components the guidelines suggest that all labeling should be uniform for all standard reagents and that the label should include the initials of the preparer, and an expiration date furnished by the vendor or manufacture to apprise users of the useful lifetime of the standard or control.

At this time the only outside quality assurance that the Medical Examiner's Office participates in is for DUI blood testing, as required by the State. All quality control activities are carried out by the Assistant Forensic Toxicologist II, who prepares drug standards. A chief toxicologist who, as part of their duties, would manage a quality assurance program, would improve the integrity of test results.

Although pathology staff has reported discrepancies in test results and has questioned the quality of the work that is produced in the Medical Examiner's Toxicology Laboratory, the Budget Analyst was able to obtain only two verifiable instances where there were significant differences between the results of toxicological tests conducted by the Medical Examiner's Office staff and the same tests conducted by an independent laboratory. This was, in part, due to the procedures used by the current staff to correct errors in test results. The manner of correcting test results makes it difficult to determine if the corrections are the result

[5]Forensic Toxicology Laboratory Guidelines prepared by the Society of Forensic Toxicologists, Inc. and the American Academy of Forensic Sciences, c. 1991, pg. 7

of a scrivener's error when reporting such results, or if the values have changed as the result of a retest.

The current practice used by the Medical Examiner's Office staff is to erase the original entries on the report and enter the new value. This is contrary to the preferred practice of maintaining the original value by lining through the entry, so it is still legible, noting the new value and dating and initialing the change. All corrections should also be noted in the laboratory's log with information regarding the nature of the error, the date and time the error was detected, the corrective actions taken to correct the problem (especially if the error was the result of an equipment malfunction), and verification of a retest. The lack of proper notation when errors occur and are corrected makes it impossible to determine if the errors committed are random or systemic, and whether or not proper remedial actions are taken.

In telephone interviews with the Public Defender, the District Attorney and Chief Deputies of the District Attorney, each person indicated that there were no problems with the quality of the toxicological work from the Medical Examiner's Office. However, these parties may not be aware of quality assurance weaknesses which might allow the defense (or in some cases, the prosecution) to mount serious challenges to the information presented in an adversarial judicial setting.

It should be noted that the Medical Examiner's Office does have a Forensic Laboratory Manager (2459) position, that is responsible for reviewing quality assurance performance for the laboratory procedures. However, staff reports that the Forensic Laboratory Manager does not conduct any quality assurance reviews and is present in the laboratory for approximately one hour per week to check the laboratory's inventory and verify supply orders.

The Medical Examiner should expand the current quality assurance program, which pertain only to DUI testing, to include all chemical analyses conducted in the toxicology laboratory. The expanded program developed by the Medical Examiner's Office should include an outside component that uses standards from outside laboratories, which have been verified, to check their work. Greater care should be taken in correcting tests results so that any individual conducting a quality assurance review is fully aware of the number of repeated tests that are the result of an error, rather than confirming the presence of a substance. In duly noting corrections, the toxicology reports should indicate the date the error was corrected and the individual responsible for making such corrections. All repeat tests that are conducted due to equipment failure should be so noted and the manner in which the equipment failure was detected and remedied should be recorded in the laboratory's log.

In order to begin developing procedure manuals and quality assurance measures, the Medical Examiner's Office should conduct a thorough in-house review of the Toxicology Laboratory utilizing the expertise of the Forensic Toxicologist to:

- Evaluate the current state of the operations to determine the extent of the deficiencies;

- Provide a detailed analysis with specific steps that should be taken to remedy such deficiencies;

- Assist in the preparation of operating and procedures manuals for the various analyses conducted in the laboratory and for the operation of various laboratory equipment;

- Provide guidance in developing a quality assurance program that includes adequate case review that is tied to an adequate chain-of-custody process; and

- Provide ongoing support for the verification of standards, calibrators and controls that are prepared for the various analyses conducted.

The results of this analysis should be presented to the Director of Administrative Services along with a schedule for implementing the recommendations that are developed as a result of the review. Should the Director of Administrative Services determine that additional analysis and review is required, the City may wish to consider employing the services of an independent, licensed toxicologist, or toxicology firm, to assist in such a review.

Conclusions

The San Francisco Medical Examiner's Office Toxicology Laboratory does not fully comply with the guidelines established by the Society of Forensic Toxicologists and the American Academy of Forensic Sciences. While the Medical Examiner's Office is not required to seek accreditation from the Society of Forensic Toxicologists or the American Academy of Forensic Sciences, these guidelines are applicable to the Medical Examiner as it is involved in all three areas of toxicology defined in these guidelines.

The absence of a Forensic Toxicologist position appears to greatly affect the efficiency of the Toxicology Laboratory, especially with regard to providing the level of on-site supervision required by the Assistant Forensic Toxicologist I and II positions, and providing a consistent level of case review. The absence of such review, in addition to the design of the current toxicology test request form has resulted in a 73 percent increase in the number of tests conducted from 1993-94 to 1995-96.

The staff of the Toxicology Laboratory has not been adequately cross trained. Consequently, the efficiency of the Laboratory is compromised. Only certain staff members have been trained to perform certain tests and operate certain equipment causing delays in the processing of requests if that staff person in absent. Outdated

procedures and the lack of comprehensive operating manuals for staff use further impact the efficiency of the Laboratory. In addition to the obsolete and incomplete procedures manuals, the Medical Examiner's Office Toxicology Laboratory has a chain-of-custody process that is poorly coordinated with a case review process, and there is inadequate quality control and case review of the analyses conducted.

Recommendations

The Medical Examiner's Office should:

III.1 Reinstate the position of Forensic Toxicologist to perform the technical duties of :

- conducting the more complex, toxicological studies for forensically significant drugs on blood, urine, and other physiological specimens form both decedents and individuals suspected of violating the law;
- using gas and thin layer chromatography, ultraviolet, and visible fluorescent spectrophometry;
- conducting various toxicological procedures as needed; and
- providing supervision of the laboratory staff and operating a quality assurance program which evaluates data and ensures the accuracy of the work produced, and the technical proficiency of the laboratory and staff.

III.2 Update and revise the toxicology test request form to improve the efficiency of toxicological analyses.

III.3 Evaluate the existing staff with regard to training needed to ensure that each staff member has the requisite skills to conduct all tests performed in the laboratory and that each staff member is able to operate all of the laboratory equipment.

III.4 The recommended Forensic Laboratory Manager/Forensic Toxicologist should develop and implement a training program within 90 days of assuming their position that will provide the Toxicology Laboratory staff with:

- The background on and knowledge of the required chemical procedures used for the tests conducted in the laboratory;
- Background and training on the specific tests used to conduct all toxicological analyses; and

- An understanding of the operation of all laboratory equipment used to conduct toxicological analyses.

III.5 Upon completion of the training, the workload should be redistributed in a more equitable manner and a thorough analysis of the actual staffing requirements should be conducted under the direction of the Director of Administrative Services. This staffing analysis should be based on actual and projected workload and performance data that includes both quantitative and qualitative criteria that is used and accepted by professional forensic toxicology organizations such as the Society of Forensic Toxicologists and the American Academy of Forensic Toxicology.

III.6 Upon completion of the staffing and workload analysis, the Chief Medical Examiner should prepare a report for the Director of Administrative Services that includes supporting evidence to justify the retention of 5.5 FTEs to manage the workload in the Toxicology Laboratory or, based on the same evidence, recommends changes in the number of Assistant Forensic Toxicologists.

III.7 Develop a quality assurance program that meets the standards established by the Society of Forensic Toxicologists/American Academy of Forensic Sciences guidelines and includes the verification of standards, calibrators and controls by outside laboratories.

III.8 Conduct a critical, in-house review of the operations and processes used in the Toxicology Laboratory in order to:

- Evaluate the current state of the operations to determine the extent of the deficiencies;
- Provide a detailed analysis with specific steps that should be taken to remedy such deficiencies;
- Assist in the preparation of operating and procedures manuals for the various analyses conducted in the laboratory and for the operation of various laboratory equipment;
- Provide guidance in developing a quality assurance program that includes adequate case review that is tied to the chain-of-custody process; and
- Provide ongoing support for the verification of standards, calibrators and controls that are prepared for the various analyses conducted.

Benefits/Costs

Reinstatement of the Forensic Toxicology position could be accomplished at a net cost of approximately $17,834 in salary and associated fringe benefits ($85,289 Forensic Toxicologist Salary and Fringes, less $67,455 Forensic Lab Manager Salary and Fringe Benefits), and no increase in FTEs. This position could be funded with savings obtained through the reorganization of staffing in the Medical Examiner (see Section VI: Staffing and Organization) which combines the function of the Forensic Laboratory Manager and the Forensic Toxicologist.

Should allocating the total workload in a more equitable manner and cross-training staff create greater efficiencies, allowing the Medical Examiner's Office to reduce the number of Assistant Forensic Toxicologist I positions, approximately $69,135 in annual savings would be generated for each position that was eliminated. Currently, all of the Assistant Forensic Toxicologist Positions are filled. As such, the elimination of these positions and potential savings should be generated through attrition.

The remaining recommendations can be accomplished by existing staff and should not require additional resources.

During the City's annual budget process, the Medical Examiner's Office is required to submit a budget request that reflects the level of resources that are needed to meet the Office's stated mission. The Fiscal Year 1996-97 expenditure appropriation for the San Francisco Medical Examiner's Office totals $3,242,150. This level of funding is $180,330 greater than the 1995-96 revised budget appropriation of $3,061,820 and $352,369 greater than the actual year-end expenditures of $2,889,781, reported by the Controller's Office for FY 1995-96 accounting period 13.

Despite their participation in the annual budget process, the Medical Examiner's Office is unable to provide any specific information on the manner in which the budget request was generated, resource requirements for specific activities or the current status of the budget at a project or activity level.

The inability to provide specific information on the origin of the Office's budget request makes it difficult to: a) provide an adequate level of justification for the items requested; b) allocate resources appropriately within the Office; c) determine how resources should be reallocated and whether all of the tasks necessary to complete the mission and purpose of each program can be accomplished; and d) estimate the unit cost of tasks conducted within the Office.

The Medical Examiner's Office should gain a better understanding of the budget process by: a) learning to read and understand budget planning documents and financial reports generated by the City's financial system, b) developing in-house reports that will monitor the current status of the budget; c) taking greater responsibility for determining how resources are to be allocated between the three programs within the Office; d) devising methods for estimating the unit cost of tasks conducted within the three programs; and e) using the information obtained from monitoring budget activities to develop funding requests that more accurately reflect the allocation of resources to each of programs within the Medical Examiner.

Overview

For the purposes of operations and budget presentation the Medical Examiner's Office is divided into three programs:

- Administration for the stated purpose of providing and interpreting legal mandates and a legal record into the investigation of deaths, maintaining a professional medical office that prepares, consults on and interprets forensic medicine issues; and formulates departmental policy;

- Investigative Services which provides all field operations including 24 hour response to death scenes, determines whether a crime has been

committed and notifies respective agencies within the County, and interfaces with the public and other public agencies; and

- Medical Services which examines approximately 25 percent of all deaths in the County by providing a forensic pathology scene investigation, and forensic autopsies, interprets laboratory findings and makes medical diagnoses, consults with attorneys, provides toxicology information on cases, tests and gives expert testimony in DUI and drug related cases, and provides compliance with biohazard, safety and injury prevention programs.

The 1996-97 Department Program Budget for the Medical Examiner's Office states that the overall Departmental Mission is to:

> 'Provide forensic medicine services for the City and County. Investigate and certify cause, circumstances and manner of all deaths of other than natural causes. Provide investigation and interment of indigent persons and patients without relatives. Provide forensic medical services for living persons with issues of trauma, toxicity or contagious disease relating to criminal issues. Diagnose and respond to public health risks in the community. Diagnose child and elderly abuse with interpretations for the legal system. Maintain forensic training program. Testify in court as a medical and forensic medicine expert."

To carry our this stated mission, and provide the services of the three programs, the Medical Examiner's Office submitted an operating budget request totaling $3,191,013. After salary adjustments and related adjustments on associated fringe benefits, the final appropriation for the Medical Examiner's Office for the Fiscal Year 1996-97 expenditure appropriation was approved at $3,242,150. Approximately 89.9 percent, or $2,914,864, is attributable to personnel costs which include salaries and fringe benefits. The remaining 10.1 percent, or $327,286 is attributable to non-personnel services, including materials and supplies, and services of other departments.

Determining Unit Costs for Selected Activities in Medical Services

To get an understanding of the process used by the Medical Examiner to estimate costs and prepare budget requests, the Budget Analyst's staff selected one of the three divisions of the Medical Examiner's Office. The largest of the three programs within the Medical Examiner is the Medical Services Program. Excluding personnel costs (salaries and fringe benefits), the Medical Services Program has a budget of $114,657. This amount is used to provide funding for all non-personnel expenditures in Medical Services, which includes the Toxicology Laboratory, the Histology Laboratory (where slides, stains and tissue samples are prepared) and Pathology (the autopsy area where the actual dissection of bodies takes place). To help the Budget

Analyst determine the actual cost of operating each section of Medical Services, a detailed presentation for the three activity categories was requested.

The Chief Medical Examiner and his staff were unable to provide any information on: a) how the non-personnel budget was formulated; b) how much of the non-personnel budget is allocated to each of the three major activities within Medical Services; and c) how much of the non-personnel budget has been expended on each of the three major activities, year-to-date. Consequently, Budget Analyst's staff derived a method of determining the approximate allocation for each of the activities within the Medical Services Program.

Estimating Budget Allocations for Toxicology, Histology and Pathology

The Medical Services Program is staffed by 15.0 Full Time Equivalents (FTEs) and has an expenditure appropriation of $1,485,657. In order to estimate the cost of each of the activities within Medical Services, the expenditure budget for salaries and associated fringe benefits, assigned to each activity was calculated. Due to the manner in which personnel is used, funds allocated for temporary salaries were distributed among all three activities based on the percentage of employees allocated to each activity. Holiday and premium pay were allocated to 'Pathology' (autopsies) as it is the only activity that is carried out on a 24 hour, seven day per week basis (see Section VI: Organization and Staffing).

All non-personnel expenditure budget line items (training, materials and supplies, telephone, etc.) were apportioned based on the percentage of personnel assigned to each activity. This method of apportioning the non-personnel expenditure budget was used to control for the disparity between the salaries of the Forensic Pathologists and other staff in Medical Services, which would improperly distribute too much weight to 'Pathology'. Table IV.1 shows the allocation of resources (budget and staffing) to the three activities within Medical Services.

Table IV.1
Fiscal Year 1996-97 Staffing and Budget
for Toxicology, Pathology and Autopsies
in the Medical Services Program of the
Medical Examiner's Office

	Toxicology		Pathology		Histology		Total	
Line Item	**FTEs**	**$ Amt**	**FTEs**	**$ Amt**	**FTEs**	**$ Amt**	**FTEs**	**$ Amt**
Forensic Lab Tech	1.0	33,695						**33,695**
Clinical Lab Tech					2.0	99,650		**99,650**
Asst. Forensic Tox. I	3.0	177,271						**177,271**
Asst. Forensic Tox II	1.0	66,738						**66,738**
Forensic Lab Mgr.	0.5	28,827			0.5	28,827		**57,655**
Forensic Autopsy Tech			3.0	138,200				**138,200**
Forensic Pathologist			4.0	552,380				**552,380**
Subtotal Salaries	**5.5**		**7.0**		**2.5**		**15.0**	**1,125,589**
% Total Positions	**36.7%**		**46.7%**		**16.7%**		**100%**	
Temp Salaries		7,053		8,977		3,206		**19,236**
Holiday Pay				3,888				**3,888**
Premium Pay				31,200				**31,200**
Fringe Benefits		52,110		117,399		21,841		**191,350**
Total Salaries		**365,695**		**852,043**		**153,524**		**1.371,263**
Training		477		607		217		**1,300**
Other Current Expenses		11,024		14.031		5,011		**30,066**
Materials & Supplies		25,807		32,845		11,731		**70,383**
Toxic Waste		2,968		3,777		1,349		**8.094**
Telephone		1,765		2,247		802		**4,814**
Total Non-Personnel		**42,041**		**53,507**		**19,110**		**114,657**
Total	**5.5**	**497,041**	**7.0**	**905,550**	**2.5**	**172,634**	**15.0**	**1,485,920**

Information obtained from the City and County of San Francisco FY 1996-97 Final Consolidated Budget and Annual Appropriations Ordinance and Volume I: Department Programs Budgets for Fiscal Year 1996-97 for the City and County of San Francisco.

It should be noted that the Chief Medical Examiner does not believe that the allocation of the medical services derived by the Budget Analyst's staff is accurate. However, he was unwilling to assist in developing a more accurate allocation and as of the writing of this report, has not provided back-up documentation used to prepare the FY 1996-97 budget for the Medical Examiner's Office.

Resource Allocation and Budget Planning

During meetings with the Chief Medical Examiner and his staff, several references were made regarding the need for new equipment, and updating technology. These needs were also cited in the Fiscal Year 1995-96 Civil Grand Jury report on the Medical Examiner's Toxicology Laboratory[1]. The Medical Examiner's Office has not requested such equipment as part of their annual submission. Over the past three years, the Medical Examiner's Office also has not requested any increase in their appropriation for materials and supplies, nor has it specifically requested capital outlays for replacements of outdated equipment.

The Chief Medical Examiner stated in interviews that the Office has been unable to adjust the budget for material and supplies or request capital outlays, to purchase replacement equipment for the Medical Services Division, due to directives from the Mayor's Office and the Controller's Office regarding requests for new equipment. Also cited in interviews and the Civil Grand Jury report, were continuous budget reductions over the past five years, making it difficult to fund new equipment. Upon review of the City and County of San Francisco Consolidated Budget and Annual Appropriation Ordinance for Fiscal Year 1991/92 through 1996/97, the Budget Analyst was unable to find evidence of such reductions. The following table (Table IV.2) shows the total appropriation and the appropriation for materials and supplies from Fiscal Year 1991/92 through Fiscal Year 1996/97.

Table IV.2
Annual Appropriations for the
Medical Examiner's Office for Fiscal Years
1991/92 through 1996/97

	FY 91/92	FY 92/93	FY 93/94	FY 94/95	FY 95/96	FY 96/97
Total Appropriation	$2,770,975	$3,279,002	$2,921,758	$2,817,697	$3,339,673	$3,242,150
Materials and Supplies	$95,797	$121,773	$74,383	$96,883	$95,461	$96,883

Source: Annual Appropriation Ordinances for the City and County of San Francisco, FY 1991/92 through FY 1996/97; pg.. 87 (91/92), 88 (92/93), 74 (93/94), 95 (94/95), 94 (95/96), 8 (96/97)

The Chief Medical Examiner and his staff also indicated that they are not proficient in reviewing and analyzing the financial reports that are produced and distributed to departments by the Controller's Office on a monthly basis. The Budget Analyst's reviews of such documents noted that the Medical Examiner's Office had a balance of $119,875 at the close of Fiscal Year 1995/96, showing that the overall appropriation for the department had been underexpended. To the extent possible, these resources

[1]See City and County of San Francisco -- San Francisco Police Department/Crime Laboratory (SFPD/CL) and San Francisco Medical Examiner/Toxicology Laboratory (SFME/TL) report prepared by the FY 1995-96 City and County of San Francisco Civil Grand Jury.

could have been reallocated during the year to provide the Medical Examiner's Office with the ability to obtain needed equipment, update the Toxicology Laboratory, adhere more closely to Universal Precautions, or request essential staff.

Budget Planning and Requests

As part of the field work for this audit, the Budget Analyst requested information from the budget submissions prepared by the Medical Examiner for Fiscal Year 1996/97. The Medical Examiner's Office staff was unable to provide any such information. Additionally, the staff was unable to provide any explanation on the origin of the amount of funding requested, justifications for the amounts requested in specific line items, or whether any reallocation of resources was requested or has taken place. Yet, the Medical Examiner's Office holds that there is a prohibition against requesting new equipment which would allow the replacement of the outdated equipment in the Toxicology Laboratory.

The Annual Appropriations Ordinance indicates that $33,600 has been approved for equipment purchases for the Medical Examiner's Office for Fiscal Year 1996-97. According to the Administrative Coroner, this is related to completing the planned renovation of the storage and refrigeration units, and is considered a capital outlay. Replacement of a Gas Chromatography/Mass Selective detector (GC/MS) in the Laboratory would also be considered a capital outlay as it would exceed $1,000 in cost and have a useful life in excess of three years. Most importantly, the acquisition of this particular piece of equipment would be considered the 'replacement' of existing equipment that has surpassed its useful life, as opposed to the purchase of 'new' or 'additional' equipment which currently, does not exist in the Laboratory.

The City has a reasonable and fair budget review process. Requests for the replacement of equipment that has surpassed its useful life are evaluated and granted if the need for such equipment is compelling. The Medical Examiner's Office's inability to obtain needed equipment replacements is primarily a result of not requesting such replacements. This failure to request equipment replacements is further impacted by a lack of:

- Documentation on problems caused by using this type of equipment far past its useful life;
- Compelling justifications on the benefits of using GC/MS technology to perform drug assays; and
- An understanding of the budget instructions and process.

The staff of the Toxicology Laboratory should begin to document problems with test protocols or results caused by the age of the existing equipment, including the inability to get support and replacement parts from the manufacturers. This documentation should be used as the groundwork in preparing compelling

justifications for the replacement of equipment that are submitted as Line Item Explanations during the budget preparation and submission process. Additionally, the Medical Examiner's Office should gain a better overall understanding of the budget instructions and process in order to take advantage of opportunities to request replacement equipment, fund essential staff positions, and reallocate resources in order to operate as efficiently as possible while accomplishing the stated mission of the Office.

The Use of Management Information for Budget Development and Tracking

During the field work for this audit, the Budget Analyst's staff requested information on the unit cost of conducting various activities within the Medical Examiner's Office. Activities such as toxicological test, and autopsies were selected because the Medical Examiner's Office keeps records on the number of these activities conducted on an annual basis. Additionally, the Medical Examiner's Office has a fee schedule that was developed for use in billing clients for procedures conducted in non-Medical Examiner cases.

Despite maintaining workload information on the number of autopsies performed and toxicological tests conducted, and developing a detailed fee schedule for various functions, the Medical Examiner's Office was unable to: 1) provide specific information on the cost of operating Histology, Pathology and Toxicology sections; and 2) the specific cost of conducting in-house autopsies and toxicology tests. The Medical Examiner's Office staff further indicated that the manner in which the City's financial system, Financial Accounting Management Information System (FAMIS), tracks budget and expenditure information does not allow the Office to segregate cost data at this level of detail. As such, in-house tracking reports are planned to provide the detailed expenditure information needed.

The in-house tracking reports are to be generated on the Medical Examiner's Office's new LAN. This LAN, which has been developed within the last two year. has allowed the Medical Examiner's Office to migrate from the old WANG system and update both word processing and spreadsheet applications used to develop and monitor information on Medical Examiner's cases and administrative activities such as budget tracking and the procurement of supplies. However, the Medical Examiner's Office staff reports that the in-house spreadsheet applications have not been developed.

The Budget Analyst's staff has determined that the development and implementation of the in-house spreadsheet applications, particularly with regard to monitoring expenditures for specific activities, is extremely important. Without the ability to monitor expenditures in Histology, Toxicology and Pathology, the cost of conducting these activities cannot be accurately determined, and the Medical Examiner's Office will continue to assert that it is unable to determine the cost of conducting specific types of toxicological tests, autopsies, and external examinations.

Having detailed activity and unit cost information would allow the Medical Examiner's Office to determine the cost effectiveness of conducting activities in-house as opposed to contracting out such activities, and cost savings that could be obtained by reducing the number of toxicological tests conducted or implementing changes to autopsy protocols.

Conclusions

The Medical Examiner's Office is divided into three programs, Administration, Investigative Services and Medical Services, which provide forensic medical services for the City and County of San Francisco. The Board of Supervisors of the City approved an expenditure appropriation of $3,242,150 for Fiscal Year 1996/97 to provide the required funding for the resources necessary to accomplish the Medical Examiner's mission.

Despite having participated in the budget process, the Medical Examiner's Office staff is unable to provide any information regarding the origin of their budget request, the documentation used to generate the allocations for non-personnel expenditures for the three major programs, or how much of the budget has been expended in the three major programs, year-to-date. The inability to provide such information makes it extremely difficult to determine the unit cost of activities within the three major programs. Additionally, the Chief Medical Examiner and his staff are unwilling to provide estimates on the unit costs of conducting various activities in each of the major programs. The absence of detailed expenditure information also makes it difficult to properly allocate and reallocate resources so that the mission of the Medical Examiner is carried out as efficiently as possible.

Based on information obtained while conducting the field work for this audit, and also from information provided to the Civil Grand Jury for the City and County of San Francisco, the Medical Examiner's Office needs to replace laboratory equipment that has surpassed its useful life. However, based on an assumption that all budget requests for equipment are prohibited, such equipment has not been requested as part of the regular budget process.

In order to plan more efficiently, and prepare budget submissions that provide compelling and accurate information stating the resource needs of the Medical Examiner's Office, staff should make greater efforts to understand the financial reports that are provided by the City to monitor budget activities. Additionally, the Medical Examiner's Office should start documenting problems resulting from using laboratory equipment long past is useful life. By taking these measures, the Medical Examiner's Office would be able to take advantage of opportunities to request replacement equipment, essential staff positions and reallocate resources in order to operate as efficiently as possible.

Recommendations

To gain a better understanding of the budget process and provide information on the estimated unit cost of activities, the Medical Examiner's Office should:

IV.1 Develop a better understanding of the information generated by the City's financial system (FAMIS) and utilize that information to monitor the Office's budget.

IV.2 Develop in-house expenditure and activity reports that can be used to estimate the amount and cost of various activities such as the cost of conducting toxicological tests, autopsies, and the production of slides and tissue samples.

IV.3 Take greater responsibility for determining how resources are allocated between the three programs by:

- actively participating in the budget process and taking responsibility for the resources requested;
- monitoring budget expenditures to determine whether changes in the existing allocation should be made in order to adequately fund activities in the various programs; and
- reading and understanding the budget instructions, provided by the Controller, so that valid requests for resources are made, and compelling Line Item Explanations are prepared for new or replacement items.

Costs/Benefits

The recommendations in this section can be implemented without adding financial or staff resources to the Medical Examiner's Office. All financial reports, prepared by the Controller are available to the Medical Examiner's Office staff, as well as budget instructions. Additionally, the recent migration from the Wang Computer System to a LAN have given the Medical Examiner's Office the ability to develop the spreadsheet applications needed to monitor workload and expenditures in order to determine an estimated unit cost for specific activities.

- **Section 27491.6 of the Government Code of the State of California allows the Coroner/Medical Examiner of a city or county to hold inquests to determine the circumstances and manner of death in cases that are within the Coroner/Medical Examiner's jurisdiction. A Coroner's Inquest is defined as a formal 'court' proceeding that is conducted to provide information that will assist in determining the manner in which a individual died.**

- **Within the City and County of San Francisco, such inquests are held at the discretion of the Chief Medical Examiner, or when requested by the Attorney General, District Attorney, Sheriff, City Attorney or Chief of Police; are generally held without benefit of an inquest jury; and are generally held without representatives from the Police Department's Homicide or Criminal Investigations Unit and the District Attorney's Office.**

- **As a result, the Homicide and Criminal Investigation Units of the Police Department and the District Attorney may not be alerted to situations that would warrant further investigation due to the questionable responses or behavior of witnesses in the inquest process.**

- **In order to provide additional checks and balances to the inquest process, the Chief Medical Examiner should: 1) develop criteria to use in determining which inquests should be held with a jury; and 2) advise the District Attorney's Office and the Homicide and Criminal Investigation Units of the Police Department of the time and dates of all Medical Examiner's inquests.**

Medical Examiner Inquests

The Government Code of the State of California grants the Medical Examiner of a jurisdiction the authority to hold inquests at their discretion. The Code also states that the Medical Examiner:

> "...shall hold an inquest if directed to do so by the Attorney General, district attorney, sheriff, city prosecutor, city attorney or chief of police of a city in the county of which such coroner has jurisdiction."

These inquests are to be open to the public and, at the discretion of the Medical Examiner, can be held with or without a jury.

Medical Examiner Inquests are conducted to determine the manner of death. As stipulated by the Code, the results of the inquest should yield: the name of the deceased; the time and place of death; the medical cause of death; and whether death was the result of natural causes, a suicide, an accident or a homicide. A homicide is

a death at the hands of another person, that is not accidental. If the Chief Medical Examiner determines that the manner of death is homicide, the Medical Examiner is required to transmit the written findings to the district attorney, the police in the jurisdiction where the body was recovered and any other police agency requesting copies of the findings

Medical Examiner's Inquests Held in the City and County of San Francisco

The Medical Examiner's Office for the City and County of San Francisco generally calls for an inquest when there is equivalent information regarding the circumstances of a death and a decision must be made between two or more possible manners of death. An inquest may also be called if the Chief Medical Examiner is not comfortable with the information witnesses provide regarding the circumstances of a death. The Chief Medical Examiner stated, and records indicated that many times, the question to be answered during the inquest is whether the manner of death should be noted as 'Suicide' or 'Accident'. In these cases the inquest serves to put the witness under oath to answer questions regarding the witness' knowledge and impressions surrounding the circumstances of a particular individual's death. The Chief Medical Examiner states that other reasons for holding inquests include:

- Monitoring the quality of services provided by after hospital care facilities;
- Monitoring the quality of service provided by hospital emergency treatment;
- Establishing a record of incidents occurring at licensed care facilities if there is a question or concern about treatment or decision making processes; and,
- Providing families with a means of addressing concerns regarding the death of a family member and the circumstances surrounding that death.

On average, approximately 20 inquests take place annually in the City. During calendar year 1995, the Medical Examiner's Office held 30 inquests. During the first eleven months of calendar year 1996, the Medical Examiner held 19 inquests. To evaluate the outcome of inquests, information on all inquests conducted between 1993 and November of 1996 were reviewed. In total, 81 inquests were held during the 4 year period. The overwhelming majority of those inquests resulting in a determination that the manner of death should be noted as 'Accident'. Only one case resulted in a determination that the manner of death should be noted as 'Homicide' and eight were noted as 'Undetermined'. The following table provides details on the outcome on inquests held from 1993 to the present.

Table V.1
Outcome of Inquests Held from 1993 to 1996
By Manner of Death

	1993	1994	1995	1996 (1)	Total
Natural	2	1	5	1	9
Accident	11	7	12	14	44
Suicide	0	4	8	2	14
Homicide	0	0	1	0	1
Undetermined	1	3	2	2	8
Equivocal	3	0	2	0	5
Total Inquests	17	15	30	19	81

Source: Medical Examiner's Inquest Log and individual case files for 1993, 1994, 1995 and 1996. See Work Papers for additional details.
(1) data for 1996 includes inquests held from January 1, 1996 through November 30, 1996.

Observation of Coroner's Inquest Proceedings

As part of the fieldwork for this audit, the Budget Analyst's staff observed the proceedings of two inquests. Both inquests were held by the Chief Medical Examiner and neither was attended by representatives from any law enforcement or court agency. As such, the Chief Medical Examiner served as the sole arbiter of the facts presented and the reliability of the witnesses providing testimony.

In opening the inquests, the Chief Medical Examiner explained that the inquest is a California courtroom of inquiry, but not a courtroom of law. The Chief Medical Examiner further explained that the purpose of the inquest is not to assess criminality nor make charges against any particular individual. In accordance with the laws of California, these inquests were held by the Chief Medical Examiner for the purpose of determining the cause, circumstances and manner of death.

Purpose of the Medical Examiner's Questions

In both cases, the Chief Medical Examiner posed question to help determine:

- The circumstances surrounding the individual's death;
- The behavior of the decedent in the time period leading up to their death;
- The actions of individuals who were present at the time of death or shortly before the death occurred;

- The forthrightness of the witnesses statements regarding the circumstances of the death of each individual inquested; and,

- Whether the actions of the decedent or any person present at, or near the time of death, could have caused or contributed to the death.

Budget Analyst's Staff Observations of Inquest Proceedings

As previously noted, the Budget Analyst's staff attended two inquests. One involved the death of an individual as a result of methamphetamine poisoning and the other a suicide. In the first case the Chief Medical Examiner needed to determine whether the manner of death should be recorded as an accident or a suicide. In the second case the Chief Medical Examiner was trying to determine if the suicide was assisted and if parties reporting the death knowingly gave false information to the Medical Examiner. Details of these cases can be found in Appendix III.

The audit staff was informed during an interview with the Chief Medical Examiner that inquests are not legal proceedings. The general parameters of the process were explained at the opening of the proceeding for each case. Despite this prior knowledge, several aspects of the two inquests observed by the audit staff caused concern.

- First, there were not representatives from the Police Department Criminal Investigation Unit present at either inquest. Upon further discussion with the Chief Medical Examiner, he indicated that the Police would have been interested in Case #1 only if there was evidence of a methamphetamine laboratory or the processing of methamphetamine. In Case #2, the Police would have been interested if the alleged suicide had been advised, assisted or encouraged in any way.

- Second, there were not representatives from the District Attorney's Office present at either inquest. Again, the Chief Medical Examiner indicated that there were no criminal charges pending and the interest of the District Attorney would have been with regard to possibly charging individuals with violations of the law.

- Third, a behaviorist trained in interpreting typical human responses and behavior was *not* in attendance at either inquest.

- Fourth, the Chief Medical Examiner is the sole arbiter of the information presented.

- Fifth, there is no cross examination of the witnesses. The family, and others in attendance who have some standing in the case are allowed to submit questions for a particular witness. However, the Chief Medical Examiner can rephrase or omit the questions at his discretion.

The Chief Medical Examiner's statements regarding the interest of the Police in the two cases inquested are reasonable. However, the Chief Medical Examiner reported to the Budget Analyst's staff that, Case #1, he believed that the decedent had ingested liquid methamphetamine, or methamphetamine oil. He further stated that the presence of methamphetamine oil suggested the presence of a methamphetamine lab. He also questioned how someone who was possibly involved in the production of methamphetamine could accidentally ingest such a large quantity of the substance. On the basis of the Chief Medical Examiner's questions regarding this case, it seems that the conditions under which he believed the Police Department would have been interested in the case existed.

Case #2 was even more clear cut with regard to the Chief Medical Examiner's criteria to notify the Police Department and the District Attorney's Office. The decedent was known to have died from 'Secobarbital and Morphine-type Alkaloid Poisoning'[1]. The Chief Medical Examiner and the Administrative Coroner both indicated that the hospice worker in attendance had withheld information from the Medical Examiner's Office that would place the death under their jurisdiction. Furthermore, it was believed that the information had been withheld intentionally. Finally, assisted suicide is not legal in the State of California and as such, any person who participates in or encourages a suicide is in violation of the laws of the State.

During the questioning of the witnesses for this inquest, all of the Chief Medical Examiner's questions were crafted to determine: 1) whether the decedent would have been capable of committing suicide without assistance; 2) how and where the decedent obtained the secobarbital used in the overdose since it was not prescribed by the decedent's physician; 3) what types of actions were taken by hospice staff and others in attendance at the scene of the apparent suicide; 4) whether anyone in attendance actively participated in the act; and 5) whether hospice staff knew that any death that did not result from natural causes was to be reported to the Medical Examiner and that State law prohibits a private physician from signing a death certificate if the manner of death could not be reported as 'Natural'. The beliefs of the Chief Medical Examiner and the Administrative Coroner and the nature of the questions asked of the witnesses meet the criteria given by the Chief Medical Examiner for determining when the District Attorney's Office should have be notified of the Chief Medical Examiner's suspicions and afforded the opportunity to attend the Inquest to make their own assessments with regard to this case.

[1]See Register Page for Medical Examiner's Case Number 1073-96 Pathologists Report Section; Page 5, of the City and County of San Francisco Chief Medical Examiner Necropsy Department Report dated September 25, 1996 stating cause of death; and City and County of San Francisco Office of the Chief Medical Examiner-Coroner Toxicology Division Report received August 6, 1996 and completed August 19, 1996 indicating the presence of Secobarbital and Morphine in the blood and urine samples drawn from the decedent.

Since the law clearly states that only one inquest can be held, it is important to make sure the process is as thorough as possible. Also, all parties having any interest in the outcome of the inquest, should be notified and given the opportunity to attend the proceedings. Interviews with the District Attorney's staff revealed that the District Attorney's Office is not routinely notified of inquests. Interviews with the Police Department staff revealed that they also do not receive notice of inquests held by the Medical Examiner's Office. While neither the District Attorney's Office nor the Police Department were particularly concerned about being notified of pending inquests, providing such notification would alert both departments of possible concerns regarding Medical Examiner's cases and allow them to make decisions on whether or not their presence at the proceeding is advised.

The one exception regarding advance notification of Medical Examiner proceedings is a monthly meeting held to review the deaths of juveniles. These meetings are convened by the Chief Medical Examiner and attended by representatives of the Child Protective Services, Police Homicide Unit, Department of Social Services, Public Health, District Attorney's Office and other agencies. However, these meetings are not inquests; and it is not clear that these meetings result in the scheduling of inquests on any of the deaths that are reviewed. If the Medical Examiner does hold inquests as a result of these meetings, the Police and the District Attorney are not notified.

Practices in Other Jurisdictions Regarding Coroner's Inquests

As part of the survey conducted regarding the practices of Coroner and Medical Examiners in California and selected locations in the United States, practices regarding convening inquests were questioned. All six of the California jurisdictions that responded operate under the same statues as the City's Medical Examiner. Los Angeles, San Diego, Santa Clara and Ventura Counties all indicated that Inquests are not held. Upon further investigation, both Los Angeles and San Diego indicated that inquests are not cost efficient. Los Angeles County found that the majority of the questions surrounding the manner of death were related to whether the death was the result of an accident or a suicide. As such, Los Angeles County has adopted a practice of conducting Psychological Autopsies.

The County of Los Angeles has contracted with trained psychiatrists, psychologists from USC Medical Center who investigate the circumstances surrounding a questionable death. During the investigative process, the psychologist interviews persons known by the decedent to determine behavior, state of mind, lifestyle and other characteristics that would be helpful in assessing the circumstances that were present at the time of death. Based on the psychologist's analysis of the information obtained, the Medical Examiner, and a panel of Deputy Medical Examiners will hear the information presented by the psychologist, deliberate, vote and ascribe the manner of death.

None of the Medical Examiners in jurisdictions outside of California (Cook County, Illinois; King County, Washington; Bexar County, Texas; Hennepin County, Minnesota; and Milwaukee County, Wisconsin) conduct inquests. Cook, Bexar and Hennepin County indicated that no inquests are conducted at all. Inquests in King County are performed by the County Executive's Office and are conducted, usually, for in-custody deaths. Inquests in Milwaukee County are conducted by Circuit Court judges or court commissioners and are ordered by the District Attorney.

Changes in San Francisco Medical Examiner's Office's Inquest Policy

The practice of conducting psychological autopsies, used in the County of Los Angeles, reportedly costs approximately $1,000 per case. Medical staff estimates that approximately six to eight psychological autopsies are conducted annually at a cost of approximately $6,000 to $8,000. In San Francisco, Medical Examiner's Inquests are conducted with known costs of approximately $34,914, (the cost of the salary and benefits for the 0.6 FTE Court Reporter). With an average of 20 inquests per year, the unit cost of conducting each inquest is approximately $1,724, excluding the cost of the Chief Medical Examiner's and Investigator's time. Changing current practices of conducting inquests to using psychological autopsies could result in savings of $724 per case inquested using the psychological autopsy process.

Information contained in Table V.1 shows that the majority of the cases in the four year period investigated resulted in a determination that the manner of death should be listed as an accident. The Budget Analyst's staff found that in 72 percent of the cases, the question to be answered was in fact whether the manner of death should be recorded as an accident or suicide. Only one cases in the four period investigated resulted in the listing of homicide as the manner of death. The remaining cases resulted in a determination that the manner of death was natural or indeterminate. As such, the conclusions reached by Los Angeles and San Diego County that psychological autopsies are more cost efficient, is reasonable.

Based on the above information, the Budget Analyst's staff has concluded that the practice of conducting Medical Examiner's Inquests should be limited. Instead, the Chief Medical Examiner should continue utilizing information from the Investigator's reports and the Forensic Pathologist's autopsy report and increase the use of information gathered by professionals trained in human behavior and mental health, where appropriate, to make determinations regarding the manner of death. By adopting a policy of using psychological autopsies, these determinations can be made in a more efficient and less costly manner. Over the four-year period investigated for this report, the approximate cost of conducting 81 Medical Examiner's Inquests was $139,656 ($34,914 X 4 = $139,656). The same 81 cases could have been handled as psychological autopsies at an approximate cost of $81,000 (81 cases X $1,000 per case = $81,000) for a savings of $58,656.

Conclusions

California law gives the Chief Medical Examiner the authority to conduct Coroner's Inquests to answer questions surrounding the circumstances of a death which may provide valuable information in determining the manner of death. Over the past four years, 81 such Inquests have been held in the City and County of San Francisco. Fifty-four percent of those inquests (44 of the 81) resulted in the manner of death being ascribed as 'Accident'.

In making the determination on the manner of death, the Chief Medical Examiner is usually the sole arbiter of the facts and information presented during the inquest. This is the result of a loss of funding for jury panels, and the authority granted to the Medical Examiner by the California Government Code. Since the California Government Code grants such authority to the Medical Examiner, he is not required to notify the Police or District Attorney of the intent to hold an inquest nor ask them to attend the proceedings. However, due to the nature of some of the questions surrounding the circumstances of death, in inquested cases, notification of the Police and District Attorney may be prudent.

During this audit, the Budget Analyst's staff was present as two such cases were inquested. The failure to notify the Police and the District Attorney of the pending inquests appeared to directly contradict the Chief Medical Examiner's explanations of when it would be prudent to alert those entities of the planned proceedings. While technically meeting the requirements of the statues and maintaining compliance with the Government Code, this practice does not allow the Police or the District Attorney to make independent assessments of the possible legal issues surrounding an individual's death.

Based on the results of our limited survey, the practice of holding inquests is waning throughout the Country. In the limited survey of Medical Examiner's Offices in California and elsewhere in the United States, only three of the eleven jurisdictions responding indicated that inquests of any kind were held. Only one of the eleven indicated that the inquests, when held, were conducted by the Medical Examiner. One jurisdiction, Los Angeles County, indicated that Psychological Autopsies are now used to determine between 'Suicide' and 'Accident' as the manner of death. Los Angeles County finds this practice much more efficient and economical than conducting inquests.

Recommendations

The Medical Examiner's Office should:

V.1 Use psychological autopsies to make determinations between accident and suicide as the manner of death. This could result in savings of $724 per case inquested using the psychological autopsy process.

V.2 Develop a method of estimating the cost of conducting an inquest so it is possible to determine what portion of the Medical Examiner's Office resources are dedicated to this function and the viability of alternatives based on cost, time and informational value of the proceedings.

V.3 Develop a policy of formally notifying the Police Department and District Attorney's Office of inquests so they can make their own assessments regarding the need to send an observer.

Cost/Benefits

Implementation of these recommendations could result in net savings of up to approximately $14,480 per year. Additionally, implementing these recommendations would allow the Police and District Attorney to make independent assessments regarding the potential legal issues surrounding the circumstances of the death of the individual being inquested. In the event that legal proceedings are required, a much stronger case could be presented by the Police and District Attorney.

- The current organizational structure of the Medical Examiner's Office illustrates an overly broad span of management control for the Chief Medical Examiner and Administrative Coroner as a result of 1) the extensive duties, activities and supervisory responsibilities undertaken by these two individuals; and 2) recent events related to staffing changes, vacancies and litigation.

- As a result of these broad spans of control, problems have arisen, such as: a general lack of supervision of line staff; the neglect of internal controls, policies and other duties; irrational and unclear lines of reporting; and low employee morale.

- To improve the overall management and organization of the Medical Examiner's Office: 1) the Chief Medical Examiner should (a) assume supervisory and management responsibility of the Medical Services functions of the Office in accordance with Recommendation VI.1 of this report; and b) delegate certain management and supervisory responsibilities to more appropriate Medical Examiner's staff, in accordance with Recommendations V1.2, VI.3 and VI.4; and 2) the Director of Administrative Services should reorganize the Medical Examiner's Office and the Office of the Public Administrator/Guardian in accordance with Recommendations VI.5 and VI.6 of this report, for an estimated savings of $109,610 annually.

The Current Organizational Structure

For budgetary purposes the Medical Examiner's Office is divided into three sections (Medical Services, Investigations and Administration). However, in practice, the organization is structured quite differently. The organizational chart for the Medical Examiner's Office, as it is currently structured, is displayed on the following page.

As depicted in the organizational chart on the following page, the Chief Medical Examiner has direct management and supervisory responsibility over the Toxicology Laboratory, the Histology Laboratory and the Pathology Section (Autopsies). Of the 39 employees, which equates to approximately 36.51 permanent FTEs in the Medical Examiner's Office, there are 13 employees who report directly to the Chief Medical Examiner, including the part-time Court Reporter. The Chief Medical Examiner also has indirect oversight over Investigations and Administration, through the Administrative Coroner. Additionally, numerous outside duties require the Chief Medical Examiner's time. These duties include (1) serving as Medical Director for Igenex Laboratories in Palo Alto, California; (2) periodically appearing in court as an expert witness for other jurisdictions; (3) giving presentations at seminars and conferences; and (4) conducting research and co-authoring articles.

Medical Examiner's Office Organizational Chart

January 1997

The organizational chart also depicts the Administrative Coroner's direct oversight responsibilities for property control, budget, purchasing, clerical, billing, medical transcription, payroll, personnel and investigative functions. In addition, the Administrative Coroner manages the Indigent Burial Program. Of the 39 employees in the Medical Examiner's Office, there are 26 full-time and part-time employees who report directly to the Administrative Coroner.

The current organizational structure of the Medical Examiner's Office demonstrates the overly broad span of management control for the two top positions in the Department.

Sources of the Problem

The broad span of management control for the two top positions is the result of several factors, including (1) the duties and responsibilities prescribed in the Civil Service position descriptions for the Chief Medical Examiner and the Administrative Coroner; (2) additional activities undertaken by these two employees which are beyond the scope of the Civil Service position descriptions; and (3) the recent chain of events. These factors are described in further detail below.

Duties and Activities of the Chief Medical Examiner and Administrative Coroner

Table VI.1 below (a) summarizes the duties and responsibilities of both the Chief Medical Examiner and the Administrative Coroner positions, as delineated in the Civil Service Commission's position descriptions; (b) lists the positions which have direct reporting relationships with each of these individuals; and (c) lists the additional activities of the Chief Medical Examiner and Administrative Coroner which are beyond the scope of the Civil Service position descriptions.

Also reflected in Table VI.1 are the Civil Service position descriptions, which were co-authored by the Chief Medical Examiner. These position descriptions encompass a wide range of duties for both the Chief Medical Examiner and the Administrative Coroner and concentrate control of the Department in the hands of two individuals.

In addition to acting as Chief Medical Examiner for the City and County of San Francisco on a 24-hours per day, seven days per week basis, the Chief Medical Examiner participates in numerous other activities. For example, the Chief Medical Examiner currently serves as the paid Medical Director for Igenex Laboratories in Palo Alto, where he appears weekly in order to fulfill his duties. Also, the Chief Medical Examiner periodically: (a) appears in court as an expert witness for other jurisdictions; (b) gives presentations at seminars and conferences; and (c) conducts independent research and co-authors articles.

Table VI.1

Responsibilities and Activities of the Chief Medical Examiner and the Administrative Coroner

CHIEF MEDICAL EXAMINER

Duties and Responsibilities:

- Overall management and supervision of Department
- Ensure that Department conforms with laws and professional standards
- Respond to homicide scenes as required and supervise collection of evidence
- Establish standards for conduct of autopsies
- Review and supervise work of medical and toxicological staff
- Interpret reports prepared by physicians, pathologists and toxicologists on staff
- Perform autopsies in cases of unusual public interest
- Confer with staff in making determinations as to the cause and manner of death
- Preside at inquests and examine witnesses
- Confer with private physicians, attorneys, police officers and district attorneys
- Prepare for and testify in court as expert witness
- Act as official spokesperson and issue official statements to news media
- Meet with families of deceased to discuss medical aspects of cases
- Develop proposals for and manage research projects
- Plan and direct instructional programs on laws and operations of Medical Examiner
- Establish controls and safety rules for use of x-ray and other equipment
- Retain, review and evaulate medical and technical consultants
- Consult with other professionals in forensic sciences and attend conferences

Direct Supervision of:

1	Administrative Coroner
3	Forensic Pathologists
1	Asst. Forensic Toxicologist II
3	Asst. Forensic Toxicologist Is
1	Forensic Lab Technician
2	Clinical Lab Technologists
1	Forensic Lab Manager
1	Court Reporter
13	TOTAL

Additional Activities:

- Medical Director, Igenex Labs
- Expert witness for other jurisdictions
- Conducts research and writes articles
- Gives speeches at conferences
- Administers flu shots and vaccines
- Manages tox and histology labs

ADMINISTRATIVE CORORNER

Duties and Responsibilities:

- Assist in overall management and supervision of non-medical functions
- Observe and evaluate field investigative personnel and review investigative reports
- Examine property receipts and direct accounting of decedents' property
- Establish and develop in-service training for non-medical personnel
- Direct preparation of official records and reports
- Supervise preparation of payrolls and departmental budget
- Notify appropriate agencies such as police, of need for specialized investigations
- Assist CME in determining need for inquest and preside at inquests in absence of CME
- Issue subpoenas, schedule inquests, arrange for court reporter, etc.
- Supervise and inspect work of morgue attendants
- Review cases remaining unclaimed in the morgue and direct search for relatives
- Authorize burial of unclaimed indigents by the City undertaker
- Answer correspondence of a non-medical nature
- Supervise administration of grants and projects
- Develop administrative procedures for specimen handling, analysis and reporting
- Establish on-going relationships with government agencies and public
- Compile data and statistics on causes and modes of death and prepare annual report
- Provide investigative input into medical and technical sections of ME Office

Direct Supervision of:

1	Senior Management Assistant
11	Coroner's Investigators
5	Drivers
5	Medical Transcribers
1	Senior Clerk Typists
3	Forensic Autopsy Technicians
26	TOTAL

Additional Activities:

- Answers telephones
- Releases property to families

In addition, both the Chief Medical Examiner and the Administrative Coroner have taken personal responsibility for performing certain tasks which could be performed by lower-level staff. For example, the Chief Medical Examiner administers flu shots and other vaccines to City staff on demand and manages the two laboratories. The Administrative Coroner performs various clerical duties such as answering telephones, releasing property to families and other duties which could easily be handled by lower level investigative or clerical staff.

Based on our interviews with current and former staff and our review of the Department's organization and operations, we do not believe that it is reasonable to expect two individuals to perform such a wide range and large number of duties effectively.

The Recent Chain of Events

Certain events which have occurred in the Department in recent years have also resulted in and/or exacerbated the excessive span of control of the Chief Medical Examiner and the Administrative Coroner. These events include: (a) the elimination of the Forensic Toxicologist position in 1993; (b) the existence of a vacant Senior Management Assistant position; (c) the numerous lawsuits filed against the Department; and (d) the poor publicity which the Department has received. Each of these factors have necessitated additional work and longer hours for the Chief Medical Examiner and the Administrative Coroner.

Elimination of Positions and Vacancies

The Department reports that it was under pressure to reduce its budget for the 1993-94 fiscal year. In response to this pressure, the Medical Examiner's Office submitted a budget proposal for FY 1993-94 which eliminated the 2458 Forensic Toxicologist, a filled position. As a result, the management and supervisory duties, previously performed by the Forensic Toxicologist, were undertaken by the Chief Medical Examiner. Subsequently, the technical duties were assumed by the Assistant Forensic Toxicologist II position. The Chief Medical Examiner is not qualified to act as chief toxicologist under the guidelines established by the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicology (AAFT). Also, as noted in Section III (**Toxicology**), the Chief Medical Examiner does not have sufficient time to properly manage and supervise the toxicology laboratory, given his many other duties and responsibilities.

The Medical Examiner's Office has an 1844 Senior Management Assistant position that is responsible for performing the following functions: payroll; personnel; purchasing; billing; computer systems; inventory management; processing, storing and releasing a decedent's personal property; budget preparation and management; probate administration; employee supervision; and interfacing with bereaved families. This position became vacant in the spring of 1994. Some of the functions of this position were thereafter performed by a provisional 1842 Management

Assistant, who was subsequently terminated due to allegations of fraud and embezzlement. The remaining functions were absorbed by the Administrative Coroner and the Forensic Lab Manager. During the summer of 1996, the duties of the 1844 Senior Management Assistant position performed by the 1842 Management Assistant were absorbed by the Forensic Lab Manager, the Executive Secretary and a Medical Transcriber. These duties have been added to the regular work performed by the individuals in these positions.

As of the writing of this report, the Department had received approval for a revised position description for the 1844 Senior Management Assistant position in order to better reflect the skills required, and had reclassified an existing employee, who had previously served as the Executive Secretary, to the redefined Senior Management Assistant position. However, this still leaves the Department with a vacant administrative/clerical position and does not completely alleviate the additional workload for other employees.

Litigation Filed Against Department and Other Events

Another factor which has contributed to an excessive workload for both the Chief Medical Examiner and the Administrative Coroner is the litigation filed against the Department by current and former employees and contractors over the past few years. In addition, the Chief Medical Examiner's accountability for revenues collected for the provision of outside services and the alleged embezzlement of funds by a subordinate employee resulted in two financial audits by the Controller's Office. These events, along with the allegations regarding the behavior of some of the investigative staff, have diverted the attention and time of the top two administrators from their regular duties While these circumstances are temporary in nature, they have been, and in some cases continue to be, a drain on the Chief Medical Examiner's and the Administrative Coroner's time, and have further exacerbated other problems such as the lack of employee supervision and low morale.

The Effects of Broad Span of Control

As a result of vacancies, litigation, and personal management styles, the Chief Medical Examiner and the Administrative Coroner have undertaken responsibilities which are too broad in scope and cannot realistically be performed by two individuals without great difficulty. Specific problems resulting from these broad spans of control are described in further detail below.

The Neglect of Certain Duties

Based on our observations and discussion with staff, the Budget Analyst has determined that it is unreasonable to expect two individuals to carry out all the responsibilities described above in an competent and effective manner (See Table VI.1). During the course of this audit, the Budget Analyst's staff observed and Medical Examiner's staff cited many management and supervisory duties, which should be carried out, but due to the overly broad spans of control of the Chief Medical Examiner and Administrative Coroner, are carried out ineffectively or are neglected. Some examples are as follows:

- Pathology staff have expressed concern over the level of supervision and training provided by the Chief Medical Examiner. Based on interviews with staff, the Chief Medical Examiner spends little time in the autopsy room and, as a general rule, does not perform autopsies on a daily or weekly basis.

- Toxicology staff receives inadequate supervision and are not trained in the use of all equipment. Based on our observations and staff reports, the Chief Medical Examiner spends less than five hours per week in the toxicology laboratory, even though he has primary responsibility for managing and supervising this laboratory. This has resulted in (1) insufficient supervisory and administrative oversight to ensure that toxicology personnel are adequately trained and experienced enough to conduct the required work, and that the work is performed accurately; (2) inadequate protocol for reviewing test data results and chain of custody; and (3) the absence of a quality assurance program.

- It is the responsibility of the Administrative Coroner to provide field supervision to the Department's 11 full-time Investigators and five part-time Drivers. While the Administrative Coroner reports that there is field supervision for investigative staff, no formal reporting procedures are in place in order to document the frequency and duration of field visits and to record the observations made during such visits by the Administrative Coroner.

- The Controller's audit of the Medical Examiner's property and revenue accounts revealed a lack of adequate supervision over administrative personnel. According to the Controller's audit, released in December of 1996, the Medical Examiner's Office failed to establish proper internal controls, allowing one employee to carry out the incompatible responsibilities of receiving decedents' cash, recording the collection and distribution of the cash, and recording the deposits of the cash into the Office's property bank account. As a result, the Medical Examiner's Office could not account for a cash shortage of $20,324 from its decedents' property account. Additionally, the Controller's audit of the Medical Examiner's Office reimbursement practices for expert witness testimony was completed during the field work portion of the Budget Analyst's management audit. While the Controller found that the practices of the Chief Medical Examiner were contrary to state code and policy, all monies due to the

City had been accounted for and transmitted. As such, the Chief Medical Examiner was exonerated.

- The general lack of understanding of budget preparation and tracking on part of the Chief Medical Examiner and the Administrative Coroner can be partially attributed to the expansive span of control for these two individuals and the resultant neglect of certain duties.

- Sufficient time has not been dedicated to preparing and updating administrative and procedural manuals throughout the Department. For example, although an administrative guidelines manual does exist, it applies only to investigations. There are no comprehensive procedural manuals for either of the two laboratories (toxicology or histology) or for autopsies.

Lack of Qualifications

As noted earlier, due to the elimination of the Forensic Toxicologist position, the Chief Medical Examiner has undertaken the responsibility of managing and supervising the toxicology laboratory. According to guidelines established for forensic toxicology laboratories by the National Association of Medical Examiners (NAME), the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicologists (AAFT), a toxicology laboratory should be directed by a chief forensic toxicologist. The Chief Medical Examiner states that he meets the requirements for membership in the society of Forensic Toxicologists.

The Budget Analyst's Office believes that absence of a full-time chief toxicologist has been a major contributing factor to the existing problems in the toxicology laboratory, cited in Section III: In order to provide better management for the Toxicology Laboratory and to be certain that no questions are raised regarding the credentials of the Medical Examiner the Budget Analyst recommends that the Office of the Medical Examiner obtain membership in the Society of Forensic Toxicologist and that the Toxicology Laboratory becomes accredited by, or complies with the guidelines issued by the Society of Forensic Toxicologists/American Academy of Forensic Scientists.

Illogical and/or Unclear Reporting Relationships

Because there are so many employees directly reporting to so few supervisors, the reporting relationships are unclear, both to the Budget Analyst's staff and to Medical Examiner's staff.

For example, although Medical Transcriber Typists work most closely with the Pathologists on a daily basis, these five employees report directly to the Administrative Coroner. The Administrative Coroner has limited, if any, knowledge of medical transcription, does not critique the Transcribers' work on a daily basis and has little basis on which to evaluate their actual job performance.

Another example is the reporting relationship between the Forensic Autopsy Technicians and the Administrative Coroner. The Forensic Autopsy Technicians are responsible for assisting the Forensic Pathologists in performing autopsies, dressing bodies and maintaining the morgue premises. Although they take most of their direction from the Forensic Pathologists, they are evaluated by the Administrative Coroner, who has no medical training and has limited, if any, knowledge of autopsy procedures, does not participate in conducting autopsies and is not responsible for inspecting the service floor or enforcing the use of universal precautions.

Due to the absence of any mid-level managers in the toxicology and pathology laboratories, all laboratory staff report directly to the Chief Medical Examiner. The reason for this is unclear, as the department head should not be responsible for the direct supervision of 11 full-time employees (see Table VI.1).

The Medical Examiner's Office does have a Forensic Lab Manager, who should be responsible for management and supervision of the laboratories. However, despite the title of "Manager," this individual exercises no authority over other employees and very little authority over the Department's two laboratories. The duties of the Forensic Laboratory Manager are primarily administrative and clerical in nature and include purchasing chemicals, equipment and supplies for both laboratories, acting as a hazardous materials coordinator, preparing and maintaining reports, operating the volunteer program and ensuring compliance with health and safety standards.[1] In accordance with the position description, the Forensic Lab Manager is responsible for maintaining a quality assurance program for both laboratories. However, based on our observations and interviews with toxicology staff, the existing Forensic Lab Manager spends only one hour per week in the lab to check inventory and verify supply orders. Thus, this position is not being utilized to its full potential and should be required to provide managerial and supervisory oversight of all laboratory functions.

Low Employee Morale

Our interviews with staff of the Medical Examiner's Office revealed widespread dissatisfaction with the management styles of both the Chief Medical Examiner and the Administrative Coroner. Complaints related primarily to the large span of control of these two positions and the lack of clearly stated policies and procedures. This dissatisfaction with management has been a major contributor to low employee morale, negatively impacting productivity and performance. Although this is a personnel issue, there are structural changes which could be made to the Department which would reduce the span of control for these top two positions, establish clearer reporting and supervisory responsibilities, and thus potentially lessen the friction between existing management and line staff.

[1] The CAO also made note of this fact it its 1990 study of the Medical Examiner's Office.

Steps to Improving the Medical Examiner's Office Organization and Operations

In order to improve the operational efficiency of the Medical Examiner, serious consideration should be given to a reorganization of the Office. Under the current structure, broad spans of control, inappropriate and unclear lines of reporting and supervisory authority and duplication of functions with other City Offices exist. By reorganizing the functions and segregating duties (medical and administrative), greater operational efficiency can be achieved.

Through our research and discussions with other jurisdictions and City officials, we identified two organizational systems used by other jurisdictions which, if combined and implemented in San Francisco, would provide certain advantages over the current organizational structure of the San Francisco Medical Examiner's Office. One system is the combined Public Administrator/Coroner, a model which is utilized by eight other California jurisdictions and which takes advantage of certain commonalties in function, such as fiduciary responsibility and asset management, between the Public Administrator and the Coroner. The second system, currently utilized by the Los Angeles County Coroner/Medical Examiner, would segregate medical functions from other Coroner functions, such as administration and investigations.

Advantages of Combining the Public Administrator and Coroner

Although several California jurisdictions have combined Coroner/Public Administrator offices, San Francisco has a separate Public Administrator's Office. The Public Administrator (PA), a State-mandated function, is responsible for investigating and probating the estates of deceased residents. Additionally, in San Francisco, the Public Administrator also serves as (a) Public Guardian (PG), who is the probate conservator for seniors at risk and the representative payee for the frail and elderly, and mental health clients, and (b) County Veterans Service Officer, who assists veterans and their dependents in obtaining VA benefits and entitlements. The San Francisco PA/PG Office consists of 41 authorized positions and has an annual budget of approximately $3 million. Overall management and supervision of the Department is the responsibility of the Public Administrator/Guardian and the Assistant Public Administrator/Guardian.

Reasons cited for having a combined Public Administrator/Coroner office include:

- Both the Medical Examiner's Office and the Public Administrator are responsible for managing the assets of decedents. While the Coroner is responsible for collecting and storing a decedent's property and releasing that property to the next of kin, the Public Administrator is responsible for investigating and administering a decedent's assets in cases where the next of kin cannot be immediately identified or located.

- The Medical Examiner and the Public Administrator collaborate on the internment of the county's indigent dead.

- Consolidation of the two offices results in reduced costs for administrative support functions, such as payroll, budget, personnel and other functions.

An additional benefit of consolidating the Public Administrator and Coroner function in San Francisco is that, as demonstrated by the recent audit of the Medical Examiner's Office property and revenue funds conducted by the Controller's Office, the San Francisco Medical Examiner's Office does not have adequate internal controls in place for the handling of decedents' property. As cited in the Controller's report, the Medical Examiner allowed one employee to carry out the incompatible responsibilities of receiving decedents' cash, recording the collection and distribution of the cash, and recording the deposits of the cash into the Office's property bank account. In addition, the Controller cited numerous accounting irregularities in the Medical Examiner's records.

On the other hand, the Public Administrator's Office, in its function as conservator for the unclaimed dead, mentally health clients and seniors at risk, is experienced in carrying out fiduciary responsibilities. The PA/PG's Office has a fiscal support team consisting of nine accounting staff who are supervised by the Assistant PA/PG. As such, the PA/PG has the internal controls in place which the Medical Examiner's Office is lacking.

Additionally, as cited in Section IV of this report, the Budget Analyst's Office has observed deficiencies in the areas of budget and planning in the Medical Examiner's Office. The PA/PG's Office has staff in place who are responsible for (a) generating and interpreting budget planning documents and financial reports; (b) tracking departmental expenditures; (c) determining resource needs; and (d) allocating resources throughout the Department. Combining the Public Administrator and Coroner functions would allow for the consolidation of budget-related functions for both Offices under the PA/PG, who already has knowledge and expertise in this area.

Because of the commonalty of functions described above, several jurisdictions have combined the Public Administrator and Coroner functions into one office. In fact, in a survey of 37 California counties by the San Mateo County Coroner Office, seven

counties reported that they combined Coroner/Public Administrator offices. These counties are: Fresno, Kern, Humboldt, Sutter, Tehama, Trinity and Kings Counties.

The Segregation of Administrative and Technical Duties

As a result of issues relating to the Chief Medical Examiner's span of control, in 1991, Los Angeles County transferred administrative and management responsibilities from the Chief Medical Examiner to an administrative manager (Director, Department of the Coroner). This Director has primary responsibility for administrative support functions, such as accounting, property, personnel, purchasing, budget management, management information and training, as well as for morgue management, investigations, the toxicology laboratory and the histology laboratory. The Chief Medical Examiner continues to oversee pathology and the residence program.

In Los Angeles, there is no reporting relationship between the Chief Medical Examiner and the Director. However, there is a direct line of communication between the two positions. For example, the Director and the Chief Medical Examiner coordinate on the preparation of the Department's budget and, when necessary, on issues regarding toxicology, histology, investigations and other areas. This structure relieves the Chief Medical Examiner of some of the burdensome operating details of running a department, thereby enabling him to dedicate more time to his area of expertise.

The Proposed New Structure

The proposed new organizational structure which we are recommending for the San Francisco Medical Examiner's Office blends aspects of the two systems described above by: (1) combining the PA/PG and the Medical Examiner's Office and (2) segregating administrative and technical duties. The recommended changes are described in detail below and would reduce the span of control, clearly define duties and establish clear lines of reporting and supervision.

Medical Services Division

Under our proposed reorganization plan, the Chief Medical Examiner would retain control over all medical and technical aspects of the Medical Examiner's Office. Unlike Los Angeles, where the Director manages the toxicology and histology laboratories, in San Francisco, the Chief Medical Examiner would retain control of toxicology and histology. However, certain administrative and management functions would be transferred from the Chief Medical Examiner to more appropriate staff.

Specifically, there would be only three employees (versus the current 13) reporting directly to the Chief Medical Examiner under the proposed reorganization. Additionally, the Chief Medical Examiner's duties would be redefined as follows, thereby excluding most administrative functions:

- Establishing standards for the conduct of autopsies, and reviewing and supervising the work of the medical staff; interpreting reports prepared by staff physicians and pathologists; performing autopsies of a more complex nature.
- Reviewing and supervising the work of the chief forensic toxicologist.
- Acting as official spokesperson for the Department on issues related to medical and technical functions.
- Responding to homicide scenes as required and directing activities concerned with the collection and preservation of evidence.
- Meeting with families of deceased to discuss the medical aspects of cases.
- Conferring with medical and investigative personnel in making determinations as to the cause of death; presiding at inquests; testifying in court as an expert witness.
- Developing proposals for and managing research projects.
- Planning and directing the pathology residence program.
- Establishing controls and safety rules for the use of X-ray and other radiation equipment.
- Consulting with other professionals in the field of forensic sciences.
- Other duties relevant to the field of forensic pathology.

The recommended changes within each area of Medical Services are described in detail below.

Toxicology

As noted throughout this report, the Department needs a chief forensic toxicologist on staff to perform more complex toxicological studies, provide supervision of laboratory staff and operate a quality assurance program. Rather than adding a new position to the budget at an annual cost of approximately $85,289 per year (consisting of $72,897 for the salary plus $12,392 for fringe benefits of a 2458 Forensic Toxicologist), the Department could utilize the existing Forensic Laboratory Manager, who, based on a review of her Curriculum Vitae, should have the

necessary professional, educational and technical qualifications, to perform these duties.

As cited in Section III of this report, the Society of Forensic Toxicologists/American Academy of Forensic Toxicologists guidelines for toxicology laboratory personnel state that the toxicology laboratory should be directed by a person with sufficient education and experience to assume the required professional, organizational, educational and administrative responsibilities. The existing Forensic Laboratory Manager meets these qualifications, as she has (a) a Ph.D. in pharmacology, (b) a bachelor's degree in chemistry, and (c) 10 years experience as an assistant forensic toxicologist.

As such, the existing Forensic Laboratory Manager could and should serve as the chief forensic toxicologist for the Department. The position description for the Forensic Lab Manager should be revised to include: (a) management of the toxicology and histology laboratories; (b) supervision of toxicology laboratory staff; (c) performance of the relatively more complex toxicological studies when necessary; (d) maintenance of the quality assurance program; (e) review of cases with pathologists, (f) responsibility for hazardous materials management and safety training; and (g) preparation of budget requests and purchase requisitions for both laboratories. Administrative and/or clerical duties currently performed by the existing Forensic Lab Manager, such as answering the telephone and preparing the annual report, should be delegated to lower level administrative and clerical staff.

The existing Forensic Lab Manager currently earns $57,655 per year, plus $9,800 in fringe benefits, for a total of $67,455. The entry level salary and fringe benefits for the 2458 Forensic Toxicologist position are $85,289 per year. Thus, the additional cost of consolidating the functions of the Forensic Lab Manager and the Forensic Toxicologist positions would be approximately $17,834 annually ($15,242 in salaries plus $2,592 for fringe benefits).

Under the new organization, all toxicology laboratory staff would report to and be evaluated by the Forensic Lab Manager/Chief Forensic Toxicologist instead of the Chief Medical Examiner. The Forensic Lab Manager/Chief Forensic Toxicologist would continue to report directly to the Chief Medical Examiner.

Consolidating the Forensic Lab Manager and the Forensic Toxicologist positions would improve supervision and management of the laboratories at a lower cost than by adding a new Forensic Toxicologist position to the Department's budget. At the same time, the span of control of the Chief Medical Examiner would be reduced, thereby allowing him to spend more time on other matters more relevant to his field of expertise.

Pathology and Histology

We recommend the following changes in reporting relationships in Pathology and Histology:

- The Forensic Pathologists should continue to report directly to the Chief Medical Examiner. However, the Histology Laboratory staff and Forensic Autopsy Technicians should be directed, supervised and reviewed by the Forensic Pathologists rather than by the Chief Medical Examiner.

- Medical Transcriber Typists should report directly to and be evaluated by the Forensic Pathologists, not the Administrative Coroner.

Additionally, based on an analysis of workload in San Francisco compared to other jurisdictions, we are recommending in Section VII.1 (**Staff and Training: Pathology**) that two Forensic Pathologist positions be replaced by less expensive qualified staff.

Administration

The Administrative Coroner currently has primary responsibility for management and supervision of administrative support and investigative functions. In order to distribute workload more evenly and to provide for more effective management of the administrative and investigative functions, we are recommending transfers of responsibility away from the Administrative Coroner position to other Medical Examiner's Office staff and City departments. These recommendations include (1) transferring oversight of the administrative support and investigative functions to the San Francisco Public Administrator/Guardian's Office and (2) delegating responsibility for supervision of investigative staff to the most senior Coroner's Investigator (see **Investigations** below).

The transfer of oversight of administrative support and investigative functions to the PA/PG's Office in San Francisco would result in the segregation of technical functions and administrative functions, as in Los Angeles County. For example, the Chief Medical Examiner would continue to oversee the Medical Services Division, while the administrative support and investigative functions, as well as administrative duties currently performed by the Chief Medical Examiner and the Administrative Coroner, would become the responsibility of the PA/PG's Office.

Based on our discussions with the San Francisco PA/PG's Office and our review of the organizational structures of other counties with combined Coroner/PA offices, we have concluded that the consolidation of the Medical Examiner's Office and the PA/PG's Office would allow for the elimination of the Administrative Coroner position, because many of the duties performed by the Administrative Coroner are also performed by the PA/PG. The elimination of this position would result in an annual savings of approximately $86,939 per year (including $74,307 in salaries and $12,632 in fringe benefits). However, because the Administrative Coroner position

is currently filled, ongoing annual costs of approximately $21,101, or the difference between the salary and fringe benefit costs of the Administrative Coroner position ($86,939) and a Coroner's Investigator position ($65,838), would be incurred until this position could be eliminated through attrition.

Under a combined PA/PG/Medical Examiner's Office, the PA/PG and Assistant PA/PG would assume the following responsibilities currently performed by the Administrative Coroner and/or the Chief Medical Examiner:

- Planning, organizing, directing and evaluating the custodial and functions of the Medical Examiner's Office, including: (1) accounting of all property and monies acquired through the investigation of deaths; (2) the preparation of payroll, the Medical Examiner's budget and other administrative support functions; and (3) the preparation of official records and reports.

- Reviewing and inspecting the Medical Examiner's Office's operations in accordance with State laws, court policies and sound managerial practices.

- Acting as official spokesperson for the Medical Examiner's Office on issues related only to administration and investigative functions.

- Directing and reviewing the activities of the senior Coroner's Investigator in charge of death investigations (see **Investigations** below).

- Managing the Indigent Burial Program.

As in Los Angeles County, there would be no reporting relationship between the Chief Medical Examiner and the PA/PG. However, there would be a direct line of communication between the two positions. For example, the PA/PG and the Chief Medical Examiner would need to coordinate on the preparation of the Medical Examiner's Office's budget and, when necessary, on issues common to both the Coroner and Public Administrator functions, such as investigations and property control.

We recommend that the following changes take place in the process of consolidating the Medical Examiner and the PA/PG's Office. In some cases, these measures would result in a cost savings to the City.

- The existing 1426 Senior Clerk Typist and the part-time clerical worker (currently classified as a Medical Transcriber) in the Medical Examiner's Office should be pooled with the staff of four clerical workers in the PA/PG Office. Clerical staff could be assigned work related to either the PA/PG or Medical Examiner functions.

- In order to provide the PA/PG with additional administrative and clerical support under the consolidated department, one 1426 Senior Clerk Typist in the PA/PG's Office should be reclassified upwards to a 1450 Executive Secretary I.

The estimated additional cost of reclassifying this position would be approximately $8,947 per year, which consists of an additional salary cost of $7,647 and fringe benefits of $1,300.

- Because of efficiencies created by pooling clerical staff from each Department, the 1452 Executive Secretary II position in the Medical Examiner's Office, which is currently vacant, could be eliminated. This would result in an annual savings of $47,894 in salaries and $8,142 in fringe benefits, for a total of $56,036 per year.

- The 1844 Senior Management Assistant in the Medical Examiner's Office should report directly to and be evaluated by the PA/PG. This employee would continue to perform property control duties for the Medical Examiner. In addition, this employee would provide technical support to the PA/PG in the areas of payroll, personnel, budget preparation and management, purchasing, management information, and other administrative support functions for both the PA/PG's Office and the Medical Examiner.

- The Senior Coroner's Investigator responsible for overseeing death investigations for the Medical Examiner's Office should report directly to and be reviewed by the PA/PG.

In summary, the City would realize the following savings by consolidating the Medical Examiner's Office and the PA/PG's Office:

Savings from eliminating 2581 Administrative Coroner position	$86,939
Savings from eliminating 1452 Executive Secretary II position	56,036
Savings Subtotal	$142,975
Less: Cost of upwards reclassification of 1426 Senior Clerk Typist position	(8,947)
Net Savings	$134,028

Investigations

In order to improve supervision of investigative staff, the responsibility for oversight and supervision of investigations should be performed separately from the management of administrative support functions. As such, we recommend transferring this responsibility from the Administrative Coroner to the most senior Coroner's Investigator in the Medical Examiner's Office.

This Investigator, who serves as bailiff for the Department, currently spends much of his time performing clerical duties, such as answering the telephone, making bank deposits and maintaining office files, which should be delegated to lower level clerical staff. The senior Investigator could then assume some of the Administrative Coroner's duties, such as providing office and field supervision of

investigative staff, reviewing investigative reports, examining property receipts, scheduling inquests, providing in-service training and interfacing with other agencies regarding death investigations.

Rather than adding a new position to the budget or creating a new supervisory classification for Coroner's Investigators, the Department should pay a supervisory differential premium to the senior Investigator for the performance of the above functions. The amount of this supervisory differential premium should be five percent of base salary, based on the provisions of the existing Memorandum of Understanding (MOU) with SEIU, Local 790, the labor organization which represents the Coroner's Investigator classification. The estimated additional cost of this supervisory differential premium would therefore be $3,292 per year, or five percent of an Investigator's salary.

An additional $3,292 in overtime should also be provided per year in order to allow the supervising Coroner's Investigator to perform spot inspections of Coroner's Investigators in the field during non-business hours. This would provide approximately 81 hours of overtime per year for field supervision of Coroner's Investigators. In addition, a formal reporting procedure should be implemented in order to document the frequency and duration of field visits and to record the observations made during such visits by the Senior Coroner's Investigator.

Under the new organizational structure, all Coroner's Investigators and Drivers would report directly to the Senior Investigator, who would report directly to the PA/PG. Coroner's Investigators and Drivers would have the same duties and responsibilities as under the current organizational structure. Although the PA/PG's Office has a staff of Investigators, the investigative functions of the PA/PG's Investigators and the Coroner's Investigators would not be consolidated. Additionally, although under separate reporting structures, there would still be a direct line of communication between Coroner's Investigators and Pathology staff on matters relating to the determination of cause and manner of death. For example, Coroner's Investigators could continue to page the on-call Pathologist during non-business hours in order to obtain answers to questions regarding death investigations.

The Proposed Organizational Structure

The new organizational structure for the combined PA/PG/Medical Examiner's Office, as proposed in this report, is shown on the following page.

Medical Examiner's Office & Public Administrator/Guardian's Office

Proposed Organizational Structure

Public Administrator/ Guardian*
Chief Medical Examiner
1 PT Court Reporter
Toxicology Laboratory
Histology Laboratory
Pathology
Coroner's Investigations
Property Control - Medical Examiner
Administrative Support - Medical Examiner & Public Administrator/ Guardian
Other Public Administrator/ Guardian Functions
1 FT Senior Management Assistant
Other PA/PG Staff* (36.0 FTE)
Indigent Burial Program
Clerical
1 FT Executive Secretary I*
1 FT Senior Clerk Typist
1 PT Medical Transcriber (0.5 FTE)
Other PA/PG Clerical Staff* (3.0 FTE)
1 FT Senior Coroner's Investigator
10 FT Coroner's Investigators
5 PT Drivers (1.0 FTE)
1 FT Forensic Lab Manager/ Chief Forensic Toxicologist
3 FT Forensic Pathologists
3 FT Forensic Autopsy Technicians
2 FT Clinical Lab Technologists
Medical Transcription
2 FT Medical Transcribers
2 PT Medical Transcribers (0.7 FTE)
1 FT Assistant Forensic Toxicologist II
3 FT Assistant Forensic Toxicologists I
1 FT Forensic Lab Technician
* Designates Staff of Public Administrator/Guardian's Office

In summary, the reassignment of duties from the Administrative Coroner and the Chief Medical Examiner to existing Medical Examiner staff and to other City departments would result in a more equitable distribution of workload throughout the Department, reduce the span of control of the Chief Medical Examiner, and result in a net annual savings in the amount of $109,610 to the City and County, as follows:

Savings from consolidating Medical Examiner's Office and PA/PG's Office	$134,028
Less: Cost of combining Forensic Lab Manager and Forensic Toxicologist positions	(17,834)
Less: Cost of supervisory differential premium and overtime for Senior Coroner's Investigator	(6,584)
Net Savings	$109,610

In addition, the organizational changes recommended above would be supplemented by improvements in training, as recommended in Section III (**Toxicology**) and Section VII (**Staff and Training**), in order to support the new structure and overall efficiencies.

Conclusions

The current organizational structure of the Medical Examiner's Office illustrates an overly broad span of management control for the Chief Medical Examiner and Administrative Coroner as a result of 1) the extensive duties, activities and supervisory responsibilities undertaken by these two individuals; and 2) recent events related to staffing changes, vacancies and litigation.

As a result of these broad spans of control, problems have arisen, such as: a general lack of supervision of line staff; the neglect of internal controls, policies and other duties; irrational and unclear lines of reporting; and low employee morale.

To improve the overall management and organization of the Medical Examiner's Office: 1) the Chief Medical Examiner should (a) assume supervisory and management responsibility of the Medical Services functions of the Office in accordance with Recommendation VI.1 of this report; and b) delegate certain management and supervisory responsibilities to more appropriate Medical Examiner's Office staff, in accordance with Recommendations V1.2, VI.3 and VI.4; and 2) the Administrative Services Director should reorganize the Medical Examiner's Office and the Office of the Public Administrator/Guardian in accordance with Recommendations VI.5 and VI.6 of this report, for an estimated savings of $109,610 annually.

Recommendations

The Chief Medical Examiner should:

VI.1 Work with the Human Resources Department to revise the position description for the Chief Medical Examiner, in order to provide the Chief Medical Examiner with responsibility for oversight of the medical and technical functions of the Medical Examiner's Office as well as limited supervisory duties.

VI.2 Work with the Human Resources Department to create a consolidated Forensic Laboratory Manager/Forensic Toxicologist position in the Medical Examiner's Office and delegate responsibility for management and supervision of the Medical Examiner's Office laboratories to this consolidated position.

VI.3 Revise reporting relationships in the Medical Services Division in order to delegate supervisory responsibility for Histology Laboratory staff, Pathology staff and Medical Transcriber Typists to the Forensic Pathologists.

VI.4 Transfer responsibility for supervision of the investigative function from the Administrative Coroner to the most senior Coroner's Investigator in the Medical Examiner's Office and implement a formal reporting procedure for documenting the frequency and duration of field visits and recording the observations made during such visits by the Senior Coroner's Investigator.

VI.5 Pending the recommended consolidation of the Medical Examiner's Office and the Public Administrator/Guardian's Office by the Director of Administrative Services, (a) transfer management and oversight of the administrative support and investigative functions of the Medical Examiner's Office to the PA/PG; (b) eliminate the Administrative Coroner and Executive Secretary positions through attrition; (c) create a pool of clerical staff in the combined PA/PG and Medical Examiner's Office which can be assigned work related to both the PA/PG and Medical Examiner's Office functions; and (d) coordinate with the PA/PG on matters concerning the Medical Examiner's Office as needed.

The Public Administrator/Guardian should:

VI.6 Pending the recommended consolidation of the Medical Examiner's Office and the PA/PG's Office by the Director of Administrative Services, (a) assume responsibility for management and oversight of the administrative support and investigative functions of the Medical Examiner's Office; (b) provide direct supervision of the Senior Coroner's Investigator and the Senior Management Assistant in the Medical Examiner; (c) create a pool of existing Medical Examiner's Office and PA/PG's clerical staff which can be assigned work related either to the PA/PG's Office or the Medical Examiner; (d) file a request with HRD for the upwards reclassification of an existing PA/PG 1426 Senior

Clerk Typist to a 1450 Executive Secretary I position; and (e) coordinate with the Chief Medical Examiner on matters concerning the Medical Examiner as needed.

The Director of Administrative Services should:

VI.7 Reorganize the Medical Examiner's Office and the Public Administrator/Public Guardian's Office in accordance with Recommendations VI.5 and VI.6 above.

Costs/Benefits

The reassignment of duties from the Administrative Coroner and the Chief Medical Examiner to existing Medical Examiner's Office staff and to other City departments would result in a more equitable distribution of workload, reduce the span of control of the Chief Medical Examiner and improve overall management and operation of the Medical Examiner.

The City would incur the following additional annual costs by implementing the recommendations included in this report:

Consolidation of Forensic Lab Manager position and Forensic Toxicologist position	$17,834
Supervisory differential premium and overtime for Senior Coroner's Investigator	6,584
Upwards reclassification of 1426 Senior Clerk Typist position to 1450 Executive Secretary I position	8,947
Total Additional Annual Cost	$33,365

However, these additional costs would be offset by the following annual savings to the City:

Savings from eliminating 2581 Administrative Coroner position	$86,939
Savings from eliminating 1452 Executive Secretary II position	56,036
Total Annual Savings	$142,975

As such, the overall net savings would be $109,610 per year, as follows:

Annual Savings	$142,975
Less: Additional Annual Costs	(33,365)
Net Annual Savings	$109,610

The Chief Medical Examiner expressed concerns regarding staffing levels and workload as a result of budget and staffing reductions, as well as existing vacancies in authorized positions. The number of authorized positions has decreased from 39.00 authorized permanent positions in FY 1992-93 to 36.51 authorized permanent positions in FY 1996-97, or a reduction of 2.49 positions (6.4 percent).

For FY 1996-97, the Medical Examiner is authorized 36.51 permanent positions and 1.54 temporary positions, for a total of 38.05 authorized positions. Of these, 34.15 positions are currently filled and 3.90 positions (10.2 percent) are currently vacant. The number of authorized positions and the number of filled positions, by division, are shown in Table VII.1 below.

Table VII.1

Medical Examiner
Authorized and Filled Positions by Division, FY 1996-97

	No. of Authorized Positions		No. of Filled Positions	
Medical Services				
Pathology:				
2582 Forensic Pathologist	5.00		3.00	
2523 Forensic Autopsy Technician	3.00		3.00	
Subtotal - Pathology		8.00		6.00
Toxicology:				
2457 Assistant Forensic Toxicologist II	1.00		1.00	
2456 Assistant Forensic Toxicologist I	3.00		3.00	
2403 Forensic Laboratory Technician	1.00		1.00	
2459 Forensic Laboratory Manager	0.50		0.50	
Subtotal - Toxicology		5.50		5.50
Histology:				
2444 Clinical Laboratory Technologist	2.00		2.00	
2459 Forensic Laboratory Manager	0.50		0.50	
Subtotal - Histology		2.50		2.50
Total - Medical Services		16.00		14.00

	No. of Authorized Positions	No. of Filled Positions
Investigative Services		
2581 Administrative Coroner	1.00	1.00
2580 Coroner's Investigator	11.90	11.00
TEMP Driver	1.54	1.54
Total - Investigative Services	14.44	13.54
Administrative Services		
2584 Chief Medical Examiner	1.00	1.00
1844 Senior Management Assistant	1.00	1.00
1452 Executive Secretary II	1.00	0.00
1440 Medical Transcriber Typist	4.00	4.00*
8138 Court Reporter	0.61	0.61
Total - Administrative Services	7.61	6.61
DEPARTMENT TOTAL	38.05	34.15

* One Medical Transcriber Typist has been on long-term disability leave for two years.

As part of the management audit of the Medical Examiner's Office, the Budget Analyst examined issues related to staffing levels, workload, training and staff qualifications within each division of the Medical Examiner's Office. In summary, the Budget Analyst found:

- Deficiencies in training for Pathology, Investigations and Toxicology staff;
- Discrepancies between staff qualifications and the required duties of and/or the actual duties being performed by staff members in the Pathology and Toxicology Sections;
- Excessive staffing in Pathology, based on a workload analysis; and
- Staffing levels for full-time and part-time positions in Investigations which are inconsistent with minimum staffing requirements.

These findings and related recommendations are described in greater detail in the following three sections: Pathology (Section VII.1), Investigations (Section VII.2) and Toxicology (Section VII.3). Implementing the recommendations contained in this section would result in annual savings of approximately $379,540.

- **In our review of the Pathology Section's staffing and training, we found that: (1) two of the three full-time Forensic Pathologists currently employed by the Medical Examiner's Office are not board eligible or board certified in forensic pathology; (2) the current staff of Forensic Autopsy Technicians are not being utilized to their potential; (3) two of the observations made by the Office of the Chief Administrative Officer (CAO) in a 1990 review of the Medical Examiner's Office regarding (a) the lack of in-service training for Pathology staff and (b) the lack of training for Pathology staff in the use of x-ray equipment, have not been addressed; (4) a comprehensive policies and procedures manual for the Pathology Section does not exist; and (5) the workload in Pathology does not appear to justify the current authorized staffing level for Forensic Pathologists.**

- **As a result, some staff do not meet qualifications as outlined in the Civil Service job descriptions; opportunities for ongoing training are compromised; no clear policies and procedures are articulated; and the overall workload for Pathology staff is low.**

- **The Chief Medical Examiner should: establish clearly articulated autopsy procedures; reclassify two Forensic Pathologist positions to Physician Specialist positions; establish a program to improve the training and qualifications of the Pathology staff; and devote half of his time to conducting forensic exams and observing staff who conduct autopsies.**

- **Our recommendations would increase the efficiency of operations and result in annual savings of approximately $297,583.**

Background and Overview

The authorized staffing for the Pathology Section includes five authorized Forensic Pathologist positions and three authorized Forensic Autopsy Technicians, for a total of eight authorized positions. It should be noted that the Chief Medical Examiner, although a licensed physician and Board certified in forensic pathology, is not included in this amount because, based on our discussions with Pathology staff, the Chief Medical Examiner does not, as a general rule, perform autopsies on a daily or weekly basis.

The annual salaries and authorized staffing levels for the Pathology Section, as reflected in the FY 1996-97 Annual Salary Ordinance, are as follows:

Class and Position Title	No. of Authorized Positions	Biweekly Salary Range	Maximum Annual Salary
2582 Forensic Pathologist	5	$4,352 - $5,291	$138,095
2523 Forensic Autopsy Technician	3	$1,457 - $1,765	46,067
Total	8		

Of the five authorized Forensic Pathologist positions, one position had been temporarily transferred (TXed) to an 1842 Management Assistant position in order to provide additional administrative support. However, the 1842 Management Assistant positions is currently vacant. In addition, a second Forensic Pathologist position recently became vacant due to a resignation. As such, there are currently three filled Forensic Pathologist positions and three filled Forensic Autopsy Technician positions, for a total of six filled positions in Pathology.

The annual budget for the Pathology Section of the Medical Services Division, as estimated by the Budget Analyst, is approximately $905,550 (see **Section IV: Planning and Budget**). This consists of (a) $852,043 in funding for permanent and temporary salaries, holiday pay, premium pay and fringe benefits; and (b) $53,507 for non-personnel costs such as materials and supplies, hazardous materials disposal, telephone and other expenses.

Staff Qualifications

The Budget Analyst's Office has identified two issues related to the qualifications of Pathology staff: (a) two of the three Forensic Pathologists currently employed by the Medical Examiner do not meet the minimum qualifications for their classification; and (b) the current staff of Forensic Autopsy Technicians are not being utilized to their potential, given their extensive backgrounds in forensic sciences and/or medicine.

Forensic Pathologists

The Forensic Pathologist is responsible for performing forensic examinations, dictating medical findings, preparing case reports and presenting interpretations and facts pertaining to the manner and cause of death. According to the licensure requirements contained in the Civil Service Commission's position description, a Forensic Pathologist is required to be licensed as a physician and surgeon by the State of California and to be Board certified or Board eligible in the field of forensic pathology.

From interviews with staff and a review of staff resumes, we learned that two of the three full-time Forensic Pathologists currently employed by the Medical Examiner are neither Board certified nor Board eligible, and therefore do not meet the minimum qualifications for a Forensic Pathologist. Nevertheless, these two

employees are conducting autopsies and making determinations as to the cause and manner of death, which often are used as evidence in criminal proceedings, without proper supervision by the Chief Medical Examiner.

The Chief Medical Examiner should make greater efforts to verify the licensure, certifications and references of applicants for the Forensic Pathologist position or work with Human Resources to rewrite the position descriptions and qualifications for Pathologists. In addition, these two employees should be immediately reclassified by the Human Resources Department to the appropriate classification which is consistent with their qualifications. Reclassification to the 2230 Physician Specialist, a classification for which the two full-time Pathologists meet the minimum qualifications, would result in an annual savings of $136,012 (salary and fringe benefit costs for two 2582 Forensic Pathologists of $323,142 per year, less the salary and fringe benefit costs for two 2230 Physician Specialists of $187,130 per year).

However, it should be noted that these savings would not be attained immediately. The individuals currently holding these positions would be reclassified, and in accordance with personnel policies, maintain their current salaries. At such time as these individuals vacate their positions, the new employees would be hired at the new classification and the reduced rate of pay.

Forensic Autopsy Technicians

According to the Civil Service Commission position description, Forensic Autopsy Technicians are responsible for assisting the Forensic Pathologists in performing autopsies, collecting evidence for testing, and maintaining the morgue premises. The minimum qualifications include a high school diploma and one year of experience (a) in a mortuary facility assisting in the care and handling of bodies or (b) as an embalmer's assistant.

Two of the three Forensic Autopsy Technicians currently employed by the Medical Examiner are medical doctors with foreign licensure. Nevertheless, their duties are primarily comprised of processing and transporting evidence for testing; preparing and cleaning the autopsy facility; ordering and stocking supplies; and managing the inventory of bodies stored in the morgue. While these tasks are essential to the operation of the Medical Examiner's Office, our interviews with Pathology staff and our review of practices in other jurisdictions have suggested that the Forensic Autopsy Technicians, given their medical training and experience, could be utilized to a greater degree in assisting in the performance of autopsies. Providing assistance in conducting autopsies under the supervision of a forensic pathologist, is already part of their job description.

As such, we recommend that the Chief Medical Examiner establish a detailed written protocol for Forensic Autopsy Technicians which takes into account the medical backgrounds and/or forensic experience of the Forensic Autopsy Technicians currently employed by the Medical Examiner's Office. As a result, Forensic Autopsy Technicians would be of greater assistance to Forensic Pathologists

in performing autopsies and other procedures, thereby improving the efficiency of operations.

Training

In a 1990 review of the Medical Examiner's Office conducted by the Office of the Chief Administrative Officer (CAO), the CAO made several observations related to training of Medical Examiner's Office staff. Two observations were made regarding the training of Pathology staff: (1) staff had not received on-going in-service training related to forensic investigation, examination and autopsy; and (2) the Chief Medical Examiner was the only staff member trained in the use of x-ray equipment, forcing Pathologists to wait until the Chief Medical Examiner was available when x-rays were needed as part of the autopsy procedure.

Through interviews with Pathology staff, we have learned that the Forensic Pathologists still receive no in-service training. In addition, the Chief Medical Examiner spends very little time supervising autopsies, and, as noted earlier, does not perform autopsies on a daily or even weekly basis. Moreover, the Chief Medical Examiner and one other employee are the only employees fully trained in the use of x-ray equipment. As such, our management audit of the Medical Examiner's Office has revealed that the CAO's two recommendations related to the training of Pathology staff have yet to be implemented, six years after the CAO's study was conducted.

We therefore recommend that the Chief Medical Examiner (1) develop and implement an in-service training program for Forensic Pathology staff and (2) provide training to Forensic Pathology staff in the use of x-ray equipment. The Chief Medical Examiner should report back to the Board of Supervisors within six months of the issuance of this report in order update the Board of Supervisors on the Medical Examiner's progress in implementing these two recommendations.

Forensic Examination Procedures

Another observation made by the Budget Analyst's Office during the course of this audit is the absence of a comprehensive procedural manual for Pathology staff. Although a procedural manual for pathology does exist, it does not contain a protocol for performing full autopsies versus other types of procedures, a detailed description of the steps involved in performing an external or internal forensic examination, or special procedures such as completing special SIDS protocols, or the policy of photographing all motor vehicle accident cases. As the performance of autopsies is the primary function of the Pathology Section, and given the extremely technical nature of and the attention to detail required in order to perform an autopsy to the standards set by the Chief Medical Examiner, the development of such a procedure manual is essential.

The Pathology Section is responsible for performing both internal and external forensic examinations of bodies in order to determine the cause and manner of death. An external examination is the least invasive procedure used to determine the cause and manner of death and is performed on patients with good medical history and no evidence of trauma or foul play. In such cases, a reasonable but not necessarily exact cause of death is usually apparent from the clinical history. At the other extreme is a full autopsy, which involves the removal of sections of organs and body fluid samples for further pathological and toxicological testing. Full autopsies are generally performed on suspected homicides, motor vehicle accidents and suspicious or unnatural deaths. In the San Francisco Medical Examiner' Office, the decision of whether to perform a full autopsy or an external examination is the Chief Medical Examiner's, except on weekends, when the Forensic Pathologist on duty makes this determination.

In some jurisdictions, other procedures, such as sign-outs and partial or limited autopsies, are also conducted under certain circumstances. Sign-outs involve the signing of death certificates for Medical Examiner cases by a Pathologist based solely on the medical history of the decedent and involve no examination of the body whatsoever. According to the Chief Medical Examiner for San Francisco, sign-outs are not performed in San Francisco, and all bodies under the jurisdiction of the Medical Examiner's Office are examined by Pathology staff. Partial autopsies are limited to a particular region or organ system of the body and are usually focused on answering a very specific question regarding the manner of death. Although other jurisdictions and Pathologists distinguish partial autopsies from external examinations, the San Francisco Chief Medical Examiner considers external examinations to be more or less the same as partial autopsies, as external examinations sometimes involve some dissection.

In response to a 1992 survey conducted by the San Mateo County Coroner/Public Administrator's Office, the San Francisco Medical Examiner's Office reported that full autopsies were conducted on 84 percent of Medical Examiner cases per year.

We conducted a survey of nine other Medical Examiners, both in California and nationwide, which can be considered somewhat comparable to San Francisco.[1] In this survey, we retrieved statistical data, as well as information on organization, investigations, pathology and toxicology. Table VII.1.1 below shows the percentage of annual deaths over which the Medical Examiner assumes jurisdiction and the percentage of such cases which receive a full autopsy in each jurisdiction surveyed, as compared to San Francisco.

[1] The nine Medical Examiner's Offices surveyed include the California Counties of Los Angeles, San Diego, Santa Clara and Ventura, and the Counties of Cook (Illinois), King (Washington), Bexar (Texas), Hennepin (Minnesota) and Milwaukee (Wisconsin).

Table VII.1.1

Percentage of Deaths under ME Jurisdiction and Percentage of Such Cases Which Receive Full Autopsy, by Jurisdiction

	% of Deaths under Jurisdiction of Coroner/Medical Examiner	% of Cases which Receive Full Autopsy
Non-California Jurisdictions:		
Cook County (Illinois)	24%	33%
King County (Washington)	12%	74%
Bexar County (Texas)	20%	65%
Hennepin County (Minnesota)	16%	44%
Milwaukee County (Wisconsin)	30%	36%
California Jurisdictions:		
Los Angeles County	20%	35%
San Diego County	14%	69%
Santa Clara County	13%	83%
Ventura County	27%	38%
Median	20%	44%
San Francisco	19%	84%

As illustrated by Table VII.1.1 above, The percentage of deaths which become Medical Examiner cases in San Francisco is near the median for the nine other jurisdictions surveyed (Median = 20%). However, the number of full autopsies conducted as a percentage of caseload is 84 percent in San Francisco, versus the median of only 44 percent. The reason for this higher percentage of full autopsies in San Francisco could be attributed to several factors.

For example, of the San Francisco Medical Examiner's cases, there may be a relatively higher proportion of suicides, homicides and accidents, as opposed to natural deaths, which would tend to result in a relatively higher number of full autopsies being conducted in comparison to other jurisdictions.

Other possible and more likely reasons for the higher number of full autopsies in San Francisco could be that (a) San Francisco has sufficient staff available to perform this more extensive and costly procedure (see **Staffing Levels** below); (b) clear definitions for each type of procedure utilized by the Medical Examiner, and a written protocol for determining when each procedure should be used, do not exist; and (c) the Chief Medical Examiner's preference for full autopsies. As a result, more full autopsies are being performed than may be warranted.

One potential means of reducing the number of full autopsies conducted is to establish clear, written definitions and criteria for the use of various forensic examination procedures in the San Francisco Medical Examiner's Office. For

example, one possibility would be to define specifically the circumstances under which a full autopsy must always be conducted, and if none of these criteria are met, Pathologists would have the discretion to perform alternative procedures, such as partial autopsies, external examinations or sign-outs. Expanding the opportunities for performing alternative procedures could result in a reduction in the number of more expensive and time-consuming full autopsies being performed. As a result, more staff time would become available for other activities, such as in-service training.

As such, we recommend that the Chief Medical Examiner prepare a policies and procedures manual for the Pathology Section which includes (a) definitions and criteria for each forensic examination procedure (e.g. full autopsy, partial autopsy, external examination, etc.) and special procedure (e.g. SIDS protocol, motor vehicle accidents, etc.) conducted in the San Francisco Medical Examiner's Office; and (b) a detailed description of the steps involved in performing each of these procedures. This would result in (a) less confusion over and more consistent use of required procedures and (b) better informed staff.

Staffing Levels

Through our review of practices in other jurisdictions as compared to the practices of the San Francisco Medical Examiner's Office, we found that the overall workload per Pathologist is lower in San Francisco than in many other jurisdictions. As such, we believe that the current workload does not justify the need for five authorized Forensic Pathologist positions, each with a salary and fringe benefit package costing between $132,897 and $161,571 per year. Moreover, (a) expanding the opportunities for performing alternative, less time-consuming procedures, as recommended above, and (b) greater participation by the Chief Medical Examiner in performing autopsies, would further reduce the need for five of these highly qualified yet expensive positions.

Our survey indicated that the overall caseload per Forensic Pathologist in the San Francisco Medical Examiner's Office is below the median for the nine other jurisdictions surveyed. Table VII.1.2 below shows the number of authorized physician staff dedicated to conducting autopsies and external examinations in each of the nine jurisdictions surveyed (excluding the chief medical examiner), the number of full autopsies per physician and the number of cases per physician, as compared to San Francisco.

Table VII.1.2

Annual Caseload per Pathologist by Jurisdiction

	No. of Authorized Physician Staff	No. of Full Autopsies per Physician per Year	No. of Cases per Physician per Year
Non-California Jurisdictions:			
Cook County (Illinois)	13	308	923
King County (Washington)	4	280	375
Bexar County (Texas)	N/A	N/A	N/A
Hennepin County (Minnesota)	3	233	533
Milwaukee County (Wisconsin)	4	277	775
California Jurisdictions:			
Los Angeles County	17	265	765
San Diego County	5	352	520
Santa Clara County	4	250	300
Ventura County	2	225	600
Median	4	271	563
San Francisco	5	263	320

Table VII.1.2 illustrates that, although San Francisco is near the median in terms of the number of full autopsies per Forensic Pathologist per year, the overall caseload per Forensic Pathologist in San Francisco is approximately 43 percent lower than the median for the eight other jurisdictions which responded. Regardless of the number of full autopsies being performed, the overall caseload in San Francisco does not justify the need for five authorized Forensic Pathologists.

According to the Chief Medical Examiner, it takes on average two to three hours to perform a full autopsy, with some autopsies taking much longer, and some much less time. Each Forensic Pathologist in San Francisco conducts only 1.2 autopsies per day.[2] This is consistent with our findings in other jurisdictions. In addition, Forensic Pathologists perform other duties, such as conducting external examinations, dictating medical findings, preparing case reports and appearing in court. However, the remaining work that must be conducted by the Forensic Pathologists in San Francisco does not approach the amount of work that must be completed by Forensic Pathologists in other jurisdictions.

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[2] Calculated as follows:

1,317	full autopsies performed in San Francisco per year (as reported in the San Mateo County Coroner's survey), divided by
5	authorized Pathologist positions, equals
263.4	full autopsies per Pathologist per year, further divided by
222	working days per year (after accounting for anticipated leave time), equals
1.2	full autopsies per Pathologist per day.

In San Francisco, the five Forensic Pathologists must complete an additional 250 to 260 partial examinations. This is equivalent to 50 to 52 partial examinations per Pathologist on an annual basis. Forensic Pathologists in other jurisdictions such as Los Angeles, Cook County, San Diego and so forth, must also complete partial autopsies, external examinations and sign-outs in order to fully discharge their duties. This variance in total workload is illustrated in Table VII.2.

The Budget Analyst is not recommending a reduction in overall staffing for the Pathology Section The Budget Analyst is recommending that (a) three 2582 Forensic Pathologist positions, two of which are currently vacant, be replaced by two less costly 2230 Physician Specialists; and (b) the Chief Medical Examiner begin performing autopsies on a routine basis.

The two new 2230 Physician Specialists which we are recommending should have completed a residency program and be Board eligible in anatomic pathology, consistent with the Civil Service minimum qualifications for this particular classification. These two staff would be available to assist the two remaining Forensic Pathologists in performing autopsies and other procedures and conduct routine autopsies under the supervision of a Forensic Pathologist. However, the Physician Specialists should not be required to participate in the on-call rotations for Forensic Pathologists. In addition, consistent with the recommendations contained in this report (see **Section VI: Organization**), the Chief Medical Examiner should assist the Forensic Pathology staff in performing autopsies on a routine basis, handle after business hours on-call schedules Monday through Thursday, and rotate with the other Forensic Pathologists for weekend on-call schedules.

The elimination of three Forensic Pathologist positions would result in savings of $484,713 per year (consisting of $414,285 in salaries and $70,428 in fringe benefits). This would be partially offset by the cost of adding two new 2230 Physician Specialist positions, each with an entry level salary of $79,970 per year (versus a starting salary of $113,587 for 2582 Forensic Pathologists). The annual salary and fringe benefit cost of two new 2230 Physician Specialist positions would therefore be $187,130 (consisting of $159,940 in salaries and $27,190 in fringe benefits). Thus, the net savings from implementing these recommendations would be $297,583 per year, as follows:

Savings from eliminating three full-time 2582 Forensic Pathologist positions	$484,713
Less:	
Annual cost of two new 2230 Physician Specialist positions	(187,130)
Net Annual Savings	$297,583

As noted above, two of the three Forensic Pathologist positions which we are recommending be eliminated are vacant. In order to avoid any negative impact to

existing employees, we recommend reclassifying the two Forensic Pathologists who, as noted earlier in this section, do not currently meet the minimum qualifications for the Forensic Pathologist position, to the two new 2230 Physician Specialist positions, but maintaining their salaries at the current level. As a result, the savings generated as a result of these reclassifications would be gained through attrition and would not be realized immediately.

In summary, the current workload does not justify the need for five authorized Forensic Pathologist positions. Replacing three Forensic Pathologist positions with two less expensive Physician Specialist positions, supplemented by the Chief Medical Examiner, would provide the same level of staffing at a significantly reduced cost.

Conclusions

In our review of the Pathology Section's staffing and training, we found that: (1) two of the three full-time Forensic Pathologists currently employed by the Medical Examiner are not board eligible or board certified in forensic pathology; (2) the current staff of Forensic Autopsy Technicians are not being utilized to their potential; (3) two of the observations made by the Office of the Chief Administrative Officer (CAO) in a 1990 review of the Medical Examiner's Office regarding (a) the lack of in-service training for Pathology staff and (b) the lack of training for Pathology staff in the use of x-ray equipment, have not been addressed; (4) a comprehensive policies and procedures manual for the Pathology Section does not exist; and (5) the workload in Pathology does not appear to justify the current authorized staffing level for Forensic Pathologists.

As a result, some staff do not meet qualifications as outlined in the Civil Service job descriptions; opportunities for ongoing training are compromised; no clear policies and procedures are articulated; and the overall workload for Pathology staff is low.

The Chief Medical Examiner should: establish clearly articulated autopsy procedures; reclassify two Forensic Pathologist positions to Physician Specialist positions; establish a program to improve the training and qualifications of the Pathology staff; and devote half of his time to conducting forensic exams and observing staff who conduct autopsies.

Our recommendations would increase the efficiency of operations and result in annual savings of approximately $297,583.

Recommendations

The Chief Medical Examiner should:

VII.1.1 File a requisition with the Department of Human Resources to reclassify the two Forensic Pathologists who currently do not meet the minimum qualifications for this classification to the appropriate classification which is consistent with their qualifications. The reclassification would not affect the current incumbents. However salary savings would be achieved if the incumbents vacate these positions.

VII.1.2 Eliminate three 2582 Forensic Pathologist positions and create two new, less costly 2230 Physician Specialists which have completed a residency program and are Board eligible in anatomic pathology. These two new staff should be available to assist the two remaining Forensic Pathologists in performing autopsies and other procedures but should not be required to participate in the on-call rotations for Forensic Pathologists. This change would result in a reduction of one position. These reductions would be achieved through attrition.

VII.1.3 Assist the Forensic Pathology staff in performing autopsies on a routine basis and participating in on-call rotations.

VII.1.4 Establish a detailed written protocol for Forensic Autopsy Technicians which takes into account the medical backgrounds and/or forensic experience of the Forensic Autopsy Technicians currently employed by the Medical Examiner.

VII.1.5 Prepare a policies and procedures manual for the Pathology Section which includes (a) definitions and criteria for each forensic examination procedure (e.g. full autopsy, partial autopsy, external examination, etc.) and special procedure (e.g. SIDS protocol, motor vehicle accidents, etc.) conducted in the Medical Examiner; and (b) a detailed description of the steps involved in performing each of these procedures.

VII.1.6 Report back to the Board of Supervisors within six months of the issuance of this report on progress made in (a) developing and implementing an in-service training program for Forensic Pathology staff and (b) providing training to Forensic Pathology staff in the use of x-ray equipment.

Costs/Benefits

The estimated cost of adding two new 2230 Physician Specialist positions would be approximately $187,130 per year. However, this cost would be completely offset by a reduction in salary and fringe benefit expenditures for three Forensic Pathologist

positions of approximately $484,713 per year, resulting in a net annual savings of $297,583.

The implementation of our recommendations would result in the following benefits:

- Through the establishment of a protocol for Forensic Autopsy Technicians, Forensic Autopsy Technicians would be of greater assistance to Forensic Pathologists in performing autopsies and other procedures, thereby improving the efficiency of operations.

- Forensic Pathology staff would be better trained and informed in the areas of forensic investigation, examination and autopsy and in the use of x-ray equipment.

- A policies and procedures manual for the Pathology Section would provide staff with a protocol and a detailed description of the steps involved in performing each forensic examination and special procedure utilized by the Medical Examiner, thereby resulting in less confusion over and more consistent use of required procedures and better informed staff.

- Establishing criteria for the use of various autopsy procedures could reduce the number of expensive and time-consuming full-autopsies being performed. Additionally, more staff time would become available for other necessary functions, such as in-service training.

- Replacing three Forensic Pathologist positions with two less expensive Physician Specialist positions, supplemented by the Chief Medical Examiner, would provide the same level of qualified staffing at a significantly reduced cost.

- **A review of minimum staffing requirements and current staffing levels in the Investigations Division revealed that the Division is overstaffed in permanent Coroner's Investigator positions. Additionally, the part-time Drivers are paid at the same salary as entry level Coroner's Investigators, even though Drivers do not possess the same licensing and other qualifications as full-time Coroner's Investigators.**

- **In addition, based on interviews with staff and on discussions with other jurisdictions, we recommend that the Medical Examiner's Office prepare a comprehensive training program for all Coroner's Investigators, which should include some combination of training in homicide investigations, blood spatter analysis, crime scene investigations, etc. Additional training would assist the Forensic Pathologists in making determinations as to the cause and manner of death and would help ensure that Forensic Pathologists are called to suspected homicides and motor vehicle accidents only when absolutely necessary.**

- **The implementation of these recommendations would (a) reduce the staffing for Coroner's Investigators while maintaining the current level of service; (b) allow the Medical Examiner to provide backfill coverage for Coroner's Investigators with lower-cost Drivers; (c) increase the competency of all Coroner's Investigators, thereby possibly reducing call-outs, responses to death scenes, by Forensic Pathologists; and (d) result in cost savings of an estimated $81,957 per year.**

Background and Overview

The Investigations Division of the Medical Examiner's Office is responsible for investigating the circumstances of death of all cases which come under the jurisdiction of the Medical Examiner. The FY 1996-97 budget for the Investigations Division is $1,105,611, which includes (a) $1,028,083 for permanent and temporary salaries, premium pay, overtime, holiday pay and fringe benefits; and (b) $77,528 for non-personnel costs such as materials and supplies, equipment, services of other departments and other expenses. The Investigations Division consists of a 1.0 FTE authorized Administrative Coroner position, 11.9 FTE authorized Coroner's Investigator positions and 1.54 FTE authorized temporary positions, for a total of 14.44 authorized positions. Of the 11.9 authorized Investigator positions, one position is currently vacant.

The annual salaries and authorized staffing levels for the Investigations Division, as reflected in the FY 1996-97 Annual Salary Ordinance, are as follows:

Class and Position Title	No. of Authorized Positions	Biweekly Salary Range	Maximum Annual Salary
2581 Administrative Coroner	1.00	$2,342 - $2,847	$74,307
2580 Coroner's Investigator	11.90	$1,773 - $2,156	56,272
TEMP Temporary	1.54		
Total	14.44		

Full-time Coroner's Investigators work eight hour shifts, five days per week. The day is divided into three shifts: the day shift (8 AM to 4 PM), the swing shift (4 PM to 12 AM) and the midnight shift (12 AM to 8 AM). Of the 11 existing Coroner's Investigators, one serves as a bailiff for the Medical Examiner's Office. This individual works the day shift, Monday through Friday, and performs primarily clerical tasks (see **Section VI: Organization**). Of the 10 remaining Coroner's Investigators, two are currently on provisional status, as they have been working in the Medical Examiner's Office less than one year and have not yet taken the Civil Service examination. Additionally, there are approximately five part-time Drivers on staff, who are used on an as-needed basis to supplement the existing staff of full-time Coroner's Investigators and to provide backfill coverage. Drivers, in addition to driving the Medical Examiner's van, assist the Coroner's Investigators in removing bodies from the scene. However, Drivers are not always formally trained in and do not participate in other investigative activities.

Because there is no shift overlap built into Investigators' work schedules, the Medical Examiner's Office must periodically pay Coroner's Investigators for end-of-shift overtime. The Investigative Services Division's FY 1996-97 budget for overtime is $42,241 (increased from $21,519 in FY 1995-96), which provides approximately 1,045 hours of overtime per year.

Staffing Levels

A review of minimum staffing requirements and current staffing levels in the Investigations Division revealed that the Division is overstaffed in permanent Coroner's Investigator positions. Our recommendations, which are described in greater detail below, include (a) reducing the minimum staffing requirements for Peace Officer Standard Training certified Coroner's Investigators, and changing the staffing pattern; and (b) formally creating a lower-paid part-time Driver classification. The implementation of these recommendations would (a) reduce the number of Peace Office Standard Training certified staff assigned to the swing shift while maintaining the current level of service; and (b) allow the Medical

Examiner's Office to provide backfill coverage for Coroner's Investigators with lower-cost Drivers, in the event of absences.

Minimum Staffing Requirements and Current Scheduling Practices

The Investigations Division is required to provide service on a 24 hours per day, seven days per week basis. In order to ensure that this level of coverage is provided, the Medical Examiner's Office has established minimum staffing requirements and staffing patterns for each shift. According to the Medical Examiner's Office staffing pattern, there must be at least three staff members on duty during the day and swing shifts (including at least two permanent Peace Officer Standard Training certified Coroner's Investigators) and two staff members on duty during the midnight shift (including at least one permanent Peace Officer Standard Training certified Coroner's Investigator). The rationale behind these minimum staffing requirements is based on the following:

- Since two individuals are needed to lift and remove bodies from the scene, at least two employees must be assigned to each shift in order to respond to calls in the field. At least one of these individuals must be a permanent Peace Officer Standard Training certified Coroner's Investigator to comply with stated policies and competently conduct the investigation at the death scene, while the other employee may be a provisional Coroner's Investigator or part-time Driver.

- During the day and swing shifts, there must also be one additional Coroner's Investigator available to answer telephone calls at the office, and make determinations on whether or not the Medical Examiner's Office has jurisdiction over a specific case, while the two other employees in the van are responding to calls. The employees in the van are provided with a beeper and a cellular phone in case a call comes in to the Office to which they must respond.

- During the midnight shift, at least one of the two individuals on duty must be a permanent Peace Officer Standard Training certified Coroner's Investigator. While the two individuals are in route to or at a death scene, calls to the Medical Examiner's Office roll over to the non-emergency Paramedic Dispatch phone number. The Investigator later calls Paramedic Dispatch to retrieve messages. Since no Medical Examiner's Office staff are needed to stay in the office to answer calls during the midnight shift, a third person is not scheduled.

The minimum staffing requirements for investigative staff, and daily staffing pattern, as currently defined and practiced by the Medical Examiner's Office, are shown in Table VII.2.1 below:

Table VII.2.1

Current Minimum Staffing Requirements for Investigations Division

	Minimum No. of Staff per Day: Midnight Shift	Day Shift	Swing Shift	Daily Shift Total	Weekly Shift Total	Weekly Hours Total	Annual Hours Total
Coroner's Investigators Required	1	2	2	5	35	280	14,616
Coroner's Investigators or Drivers	1	1	1	3	21	168	8,770
Total Assigned to Shift	2	3	3	8	56	488	23,386

As reflected in the Table VII.2.1 above, 14,616 hours of staff time are needed per year in order to satisfy the Medical Examiner's staffing requirements for permanent Peace Officer Standard Training certified Coroner's Investigators. However, Table VII.2.2 below illustrates that the number of hours of service provided by 11 authorized Coroner's Investigators is 19,536 hours per year, or 4,920 hours more than the 14,616 hours of service needed. As such, this indicates that the number of Coroner's Investigator positions in the Medical Examiner's Office is excessive, given the current staffing requirement for permanent Peace Officer Standard Training certified Coroner's Investigators by approximately 2.4 Full Time Equivalents (4,920 divided by 2,088 equals 2.356).

Table VII.2.2

No. of Hours of Service Provided Annually by Coroner's Investigators

No. of Authorized Coroner's Investigator Staff Available to Respond to Calls	Estimated No. of Actual Hours Worked per Employee per Year	Total No. of Actual Hours Worked per Year
11*	1,776**	19,536

* Although there are 12 authorized positions, we have excluded the bailiff, since he is generally not available to respond to calls.

** Based on scheduled work hours per employee of 2,088 per year, less an estimated 312 hours of leave time per year, consisting of 80 hours of vacation leave, 40 hours of sick leave, 112 hours of holiday leave and 80 hours of other leave (e.g. compensatory time off, training, etc.)

According to the Medical Examiner's Office, anticipated and unanticipated leave time taken by Coroner's Investigators, requires the Department to schedule at least three Coroner's Investigators during the day and swing shifts in order to ensure that at least two P.O.S.T. certified Coroner's Investigators are on-duty during each of

these shifts, and at least two during the graveyard shift to ensure that at least one P.O.S.T. certified Coroner's Investigator is on duty during this shift. Table VII.2.3 below conforms to Table VII.2.1 and shows the Medical Examiner's current shift scheduling practices for P.O.S.T certified Coroner's Investigators:

Table VII.2.3

Current Shift Scheduling Practices for Investigations Division

No. of Staff Scheduled per Day:			
Midnight Shift	Day Shift	Swing Shift	Shift Total
2	3	3	8

The Budget Analyst believes that the current staffing level of Coroner's Investigators could be reduced by changing the current staffing pattern for P.O.S.T. certified Coroner's Investigators during the swing shift from two to one. The Medical Examiner's Office states that the additional person is scheduled to remain in the office to answer phones when the other two Investigators are in the field. Based on the Budget Analyst's observations, the call volume on the swing shift is light and does not justify the scheduling of the additional person. The Budget Analyst's staff estimates that there would be between 15 to 20 calls to the Medical Examiner's Office during the seven hour period between 5:00 PM and midnight. The Medical Examiner's Office could extend the current arrangement for calls coming in during the swing shift to be automatically forwarded to the Paramedic Dispatch phone number after four rings if no one is available to answer the phone. According to the Assistant Chief of the Paramedic Dispatch Unit, this would not be problematic.

Reducing the minimum staffing requirement from two to one Coroner's Investigator during the swing shift would allow the Medical Examiner's Office to eliminate one of the three Coroner's Investigators currently scheduled during the swing shift. As such, the minimum staffing requirements for permanent Peace Officer Standard Training certified Coroner's Investigators and the shift scheduling practices could be revised as shown in Tables VII.2.4 and VII.2.5 below:

Table VII.2.4

Proposed Minimum Staffing Requirements for Investigations Division

	Minimum No. of Staff per Day: Midnight Shift	Day Shift	Swing Shift	Daily Shift Total	Weekly Shift Total	Weekly Hours Total	Annual Hours Total
Coroner's Investigators Required	1	2	1	4	28	224	11,693
Coroner's Investigators or Drivers	1	1	1	3	21	168	8,770
Total Assigned to Shift	2	3	2	7	49	392	20,463

Table VII.2.5

Proposed Shift Scheduling for Coroner's Investigators

No. of Staff Scheduled per Day: Midnight Shift	Day Shift	Swing Shift	Shift Total
2	3	2	7

Reducing the number of Coroner's Investigators by one Investigator would result in a staffing level of 10 authorized full-time Coroner's Investigators (plus the bailiff). Based on an estimated 1,776 hours worked per year per Investigator (from Table VII.2.2), the actual level of service provided by Coroner's Investigators would be 17,760 hours per year (1,776 per position x 10 positions), or 6,067 hours more than the 11,693 hours of service needed under the revised minimum staffing requirements. The elimination of one Coroner's Investigator position would result in an annual savings of $67,808 per year (consisting of $56,272 in salaries and $11,536 in fringe benefits). As there is currently one vacant Coroner's Investigator position in the Medical Examiner's Office, the elimination of this position would not result in a lay-off.

It should be noted that under this proposed staffing pattern all of the scheduled personnel are permanent Peace Officer Standard Training certified Coroner's Investigators. This allows maximum flexibility in scheduling and will ensure that any absence can be backfilled with a lower paid, part-time Driver. It should also be noted that during the day shift, the Bailiff , who is a trained permanent Peace Officer Standard Training certified Coroner's Investigator is on duty. This individual can provide additional coverage by fielding telephone calls and, if necessary, respond to death scenes.

Part-Time Driver Staff

As noted above, there is an authorized staff of 1.54 FTE part-time, as-needed Drivers. Although they do not possess the same licensing and other qualifications as full-time Coroner's Investigators, part-time Drivers are paid at the first step hourly rate for a full-time Coroner's Investigator of $22.16 per hour.

The Medical Examiner's Office has an annual budget of $70,000 for temporary salaries for part-time Drivers, which provides an estimated 3,159 hours of service per year, as shown in Table VII.2.6 below:

Table VII.2.6

Estimated No. of Hours of Service Provided by Part-time Drivers

FY 1996-97 Temporary Salaries Budget	Hourly Rate for Part-time Drivers	Estimated No. of Hours Available for Part-time Drivers
$70,000	$22.16	3,159

Part-time Drivers should not be paid at the same hourly rate as Coroner's Investigators, as they do not possess the same qualifications and training. In order to alleviate this situation, we recommend that the Medical Examiner take the following steps:

- In cooperation with the Human Resources Department, formally create a part-time Driver classification to perform the duties currently performed by current part-time staff The use of this temporary staff would provide greater flexibility and allow the Medical Examiner's Office to backfill Coroner's Investigators with lower-cost Drivers.

- This new class of Drivers should be paid at the same hourly rate as the 2520 Morgue Attendant or the 2523 Forensic Autopsy Technician, as the duties of both of these classifications are more comparable with the duties of the Drivers. The 2520 Morgue Attendant earns an entry level starting salary of $17.68 per hour, and the 2523 Forensic Autopsy Technician earns an entry level starting salary of $18.21 per hour.

- Assuming an hourly rate of $17.68 per hour (a 20 percent reduction from the current hourly rate of $22.16), the annual budget for temporary salaries should be reduced by $14,149, from $70,000 to $55,851 per year. This temporary salaries budget of 55,851 would still provide 3,159 hours of service by part-time Drivers at $17.68 per hour.

In summary, the total savings from eliminating one Coroner's Investigator positions and reducing the annual budget for temporary salaries is $81,957 per year, as shown below:

Savings from eliminating one Coroner's Investigator positions	$67,808
Savings from reducing temporary salaries annual budget for part-time Drivers	14,149
Net Annual Savings	$81,957

The implementation of the above recommendations would also allow the Medical Examiner to exceed the revised minimum staffing requirement by 456 hours per year, as shown below:

Position Title	FT/PT Status	No. of Positions	Hours of Service Provided*
Coroner's Investigator	FT	10.0**	17,760
Driver	PT	1.54	3,159
Total		11.54	20,919
Minimum Staffing Requirement (from Table VII.2.4 above)			(20,463)
Excess of Actual over Minimum Hours of Service			456

* Based on an estimated 1,776 hours of service provided per employee per year for full-time employees.

** Excludes bailiff.

In addition, as noted above, the Investigative Services Division has an annual overtime budget of $42,241, which provides an additional 1,045 hours of overtime annually.

Training and Qualifications

The training and experience requirements for Coroner's Investigators, as defined by the Civil Service Commission position description, include:

- Possession of a High School diploma;
- At least two years of applicable experience in a coroner's office, private funeral parlor or in related field investigation work; and

- Possession of a valid State Chauffeurs License and a current, valid Embalmers License issued by the Board of Funeral Directors and Embalmers of the State of California.

In addition, newly hired Coroner's Investigators are required to participate in the 80-hour Peace Officers Standard of Training (POST) basic training course and the California Penal Code 832 powers of arrest class. Additionally, new Coroner's Investigators receive a minimum of six-months of in-house training. Although homicide investigation and crime scene investigation training is available through POST, this training is currently not required for Coroner's Investigator staff.

In our survey of other comparable jurisdictions, two jurisdictions stated that POST death investigation training is required for investigative staff. According to the Police Department, POST offers various classes in crime scene investigations, death investigations and/or blood spatter analysis.

The Chief Medical Examiner currently has a policy of sending an on-call Forensic Pathologist to each scene involving a suspected homicide or motor vehicle accident. The Coroner's Investigator at the scene of death is required to page the on-call Forensic Pathologist if (a) he/she suspects that a death has been caused by homicide; (b) a death has been caused by a motor vehicle accident; or (c) the cause of death is unclear. Since Pathologists are not eligible to receive paid overtime, Pathologists receive compensatory time off each time they are called out to a scene. While the practice of sending a Forensic Pathologist to suspected homicides and motor vehicle accidents is beneficial in that it assists the Pathologist in determining the manner and cause of death, it is time-consuming and sometimes results in unnecessary costs if it is determined at the scene that the cause of death was not in fact a homicide.

We recommend that the Medical Examiner's Office prepare a comprehensive training program for all Coroner's Investigators, which should include some combination of homicide investigations, blood spatter analysis, crime scene investigations and/or other types of training. This would equip Coroner's Investigators with the necessary training to make more educated decisions regarding the circumstances of death, which will assist them in determining whether it is necessary to page the on-call Forensic Pathologist. For example, as a result of this additional training, Coroner's Investigators may in some cases be able to rule out homicide as the cause of death, thereby avoiding a costly on-scene visit by the on-call Forensic Pathologist. Additional training for Coroner's Investigators would also assist the Forensic Pathologists in making determinations as to the cause and manner of death, and it would help ensure that Forensic Pathologists are called to all suspected homicides and to motor vehicle accidents only when absolutely necessary.

Conclusions

A review of minimum staffing requirements and current staffing levels in the Investigations Division revealed that the Division is overstaffed in permanent Coroner's Investigator positions. Additionally, the staff of part-time Drivers are paid at the same salary as entry level Coroner's Investigators, even though Drivers do not possess the same licensing and other qualifications as full-time Coroner's Investigators.

In addition, based on interviews with staff and on discussions with other jurisdictions, we recommend that the Medical Examiner's Office prepare a comprehensive training program for all Coroner's Investigators, which should include some combination of training in homicide investigations, blood spatter analysis, crime scene investigations, etc. Additional training would assist the Forensic Pathologists in making determinations as to the cause and manner of death and would help ensure that Forensic Pathologists are called to suspected homicides and motor vehicle accidents only when absolutely necessary.

The implementation of these recommendations would (a) reduce the minimum staffing requirements for Coroner's Investigators while maintaining the current level of service; (b) allow the Medical Examiner's Office to provide backfill coverage for Coroner's Investigators with lower-cost Drivers; (c) increase the competency of all Coroner's Investigators, thereby possibly reducing call-outs for Forensic Pathologists; and (d) result in cost savings of an estimated $81,957 per year.

Recommendations

The Administrative Coroner and/or Chief Medical Examiner should:

VII.2.1 Reduce the minimum staffing requirement for Coroner's Investigators during the swing shift from two to one Coroner's Investigator by arranging for calls coming in during the swing shift to be automatically forwarded to the DPH Paramedic Dispatch phone number after four rings if no one is available to answer the phone in the Medical Examiner's Office, as is currently the practice during the midnight shift.

VII.2.2 Reduce the number of Coroner's Investigator positions by one positions.

VII.2.3 In cooperation with the Human Resources Department, formally create a part-time Driver classification to perform the duties currently performed by current staff. This new class of part-time Drivers should be paid at the same hourly rate as the 2520 Morgue Attendant classification or the 2523 Forensic Autopsy Technician classification.

VII.2.4 Reduce the annual temporary salaries budget for Investigative Services by $14,149 , from $70,000 to $55,851 per year.

VII.2.5 Prepare a comprehensive training program for all Coroner's Investigators, which should include some combination of homicide investigations, blood spatter analysis, crime scene investigations and/or other types of training.

Costs/Benefits

The elimination of one Coroner's Investigator positions, would result in an annual savings of $67,808 per year. In addition, paying part-time Drives at a lower hourly rate than Coroner's Investigators would allow for a reduction in the temporary salaries budget by $14,149, resulting in a total savings of $81,957 annually.

The use of lower-paid temporary staff would allow the Medical Examiner's Office to provide backfill coverage for Coroner's Investigators with lower-cost Drivers.

The implementation of these recommendations would also reduce the minimum staffing requirements while maintaining the current level of service.

Additional training for Coroner's Investigators would assist the Forensic Pathologists in making determinations as to the cause and manner of death and would help ensure that Forensic Pathologists are called to suspected homicides and motor vehicle accidents only when absolutely necessary.

- The National Association of Medical Examiners (NAME), the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicology (AAFT) recommend cross-training for all toxicology laboratory staff.
- The Budget Analyst has determined that the amount of training on instrumentation and procedures should be increased for all personnel and that the additional training would improve the flow of work, eliminate the dependence of staff on a specific person to complete a test, and reduce turn-around time.
- As such, the Chief Medical Examiner should (a) revise the position description for the Assistant Forensic Toxicologist I position to place a greater emphasis on training in the use of laboratory equipment used to conduct tests (b) develop a procedural manual for Toxicology staff; and (c) as recommended in Sections III and VI of this report, hire a qualified staff person to manage the Toxicology Laboratory.
- Implementing these recommendations would improve the quality of the work performed by the Toxicology Laboratory and reduce the amount of time required to complete tests and determine the cause of death.

Background and Overview

The Toxicology Laboratory of the Medical Examiner is primarily responsible for providing comprehensive forensic toxicology services that assist in determining, or providing verification of the cause and manner of death. The FY 1996-97 budget for the Toxicology Laboratory, as estimated by the Budget Analyst, is $497,041, which includes (a) $365,695 for permanent and temporary salaries and fringe benefits; and (b) $42,041 for non-personnel costs such as materials and supplies, telephone, hazardous waste disposal and other expenses (see **Section IV: Planning and Budget**). The Toxicology Laboratory consists of the following authorized personnel: (a) 1.0 FTE Assistant Forensic Toxicologist II position; (b) 3.0 FTE Assistant Forensic Toxicologist I positions; (c) 1.0 FTE Forensic Lab Technician position; and (d) 0.5 FTE Forensic Laboratory Manager position, for a total of 5.5 FTE authorized positions, all of which are currently filled.

The annual salaries and authorized staffing levels for the Toxicology Laboratory, as reflected in the FY 1996-97 Annual Salary Ordinance, are as follows:

Class and Position Title	No. of Authorized Positions	Biweekly Salary Range	Maximum Annual Salary
2457 Assistant Forensic Toxicologist II	1.0	$2,104 - $2,557	$66,738
2456 Assistant Forensic Toxicologist I	3.0	$1,862 - $2,264	59,090
2403 Forensic Laboratory Technician	1.0	$1,067 - $1,291	33,695
2459 Forensic Laboratory Manager	0.5	$1,818 - $2,209	57,655
Total	5.5		

Staff Training and Qualifications

Our management audit of the Medical Examiner's revealed several problems related to staff training in the Toxicology Laboratory. These include: (a) the current staff of Assistant Forensic Toxicologist I positions are not adequately trained in all aspects of laboratory procedures and the operation of equipment to perform all of the necessary duties; (b) a detailed procedural manual for the Toxicology Laboratory does not exist; and (c) given her qualifications, the existing Forensic Laboratory Manager is being underutilized by the Department. Remediation of these problems would significantly improve the quality and reliability of work performed by the Toxicology Laboratory.

Assistant Forensic Toxicologist I Positions

As noted in Section III (**Toxicology**) of this report, the Assistant Forensic Toxicologist II is a lower-level non-management position that was revised in response to the elimination of the Forensic Toxicologist position in FY 1993-94 and is responsible for supervising some of the functions of the Toxicology Laboratory. Duties of this position include assigning cases to lower level staff and performing some of the more complex toxicological analyses.

Also as noted in Section III of this report, the Assistant Forensic Toxicologist II is the only staff member who has been trained to utilize the 5890 Gas Chromatography/Mass Selective (GC-MS) equipment purchased in 1989. As a result, about 75 percent of the Medical Examiner's toxicology cases, or 81.25 percent of all the toxicological tests performed, can be completed by only one staff person. In addition, because each Assistant Forensic Toxicologist I is assigned to a particular type of case (e.g. Medical Examiner, DUI, 11550, etc.), the specific procedures for conducting the analyses necessary to complete the testing for each type of case are known only to the staff person assigned to that particular type of case. As a result, if a particular staff member is absent, the analyses required to complete the toxicological tests assigned to that individual cannot be conducted. As noted in Section III, one reason for these inefficiencies is the absence of any cross-training, so

that each staff person is familiar with the operation of all equipment and with the procedures involved in conducting all types of analyses.[1]

The minimum qualifications for the Assistant Forensic Toxicologist I position, as delineated in the Civil Service Commission's position description, consist of:

- Good knowledge of the principles and practices of toxicology, biology and chemistry with specific application to the analyses of body tissues and fluids, and

- Ability to understand and use complex analytical and computer-assisted equipment; analyze and evaluate data collected in the course of investigations; assist in independent research; prepare scientific reports; and testify and provide technical information for forensic purposes.

We recommend revising the position description for the Assistant Forensic Toxicologist I position in order to emphasize the skills required to utilize all of the equipment and instruments used in the Toxicology Laboratory. Specifically, the Assistant Forensic Toxicologist I position should:

- Possess a bachelor's degree in a scientific discipline such as chemistry, biochemistry, toxicology, pharmacology, etc.; and

- Have previous experience working in a toxicology or pharmacology setting.

Revising the position description for the Assistant Forensic Toxicologist I classification would result in the hiring of staff who are better qualified to perform all the various analyses needed and to operate all the equipment utilized by the Toxicology Laboratory. This would reduce the amount of time required to complete toxicology examinations and would improve the reliability of results.

Other Staff Training and Qualification Problems in the Toxicology Laboratory

The following staff training and qualification issues and problems are discussed in greater detail elsewhere in this report:

- The failure to develop a detailed procedural manual for the Toxicology Laboratory results in inconsistency in protocols, a staff that is inadequately informed about routinely used analytical and administrative procedures, and the isolation of duties (see **Section III: Toxicology**).

- Based on standards set forth by the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicology (AAFT), the Chief Medical Examiner does not have sufficient time to manage and supervise the Toxicology Laboratory as detailed in these guidelines (see **Section III: Toxicology** and **Section VI: Organization**).

[1] This observation was also made by the CAO in its 1990 review of the Medical Examiner's Office.

- Given her qualifications, the existing Forensic Laboratory Manager is being underutilized. Although the existing Forensic Lab Manager meets the SFT/AAFT guidelines for directing a toxicology laboratory, in that she has a Ph.D. in pharmacology, a bachelor's degree in chemistry and 10 years of experience as an assistant forensic toxicologist, she currently performs primarily clerical duties, such as answering the telephone, preparing the annual report and ordering supplies, which should be performed by lower level clerical staff. The Forensic Laboratory Manager could and should serve as the Forensic Toxicologist for the Medical Examiner (see **Section III: Toxicology** and **Section VI: Organization**).

Conclusions

The National Association of Medical Examiners (NAME), the Society of Forensic Toxicologists (SFT) and the American Academy of Forensic Toxicology (AAFT) recommend cross-training for all toxicology laboratory staff.

Because of the lack of training in the Toxicology Laboratory, 81.25 percent of toxicological tests performed can only be conducted by the one staff person trained in the use of the equipment, and the analyses required to complete testing for certain types of cases assigned to a particular individual cannot be conducted if that individual is absent from work.

Also, based on interviews with Toxicology staff, the Budget Analyst has determined that the three Assistant Forensic Toxicologist Is currently employed by the Medical Examiner do not possess the extensive chemical background necessary to perform all of the toxicological analyses and to operate the equipment utilized in the Toxicology Laboratory.

As such, the Chief Medical Examiner should (a) revise the position description for the Assistant Forensic Toxicologist I position to place a greater emphasis on the need for an extensive background in chemistry or a related discipline, such as biochemistry, toxicology or pharmacology; (b) develop a procedural manual for Toxicology staff; and (c) as recommended in Sections III and VI of this report, hire a qualified staff person to manage the Toxicology Laboratory.

Implementing these recommendations would improve the quality of the work performed by the Toxicology Laboratory and reduce the amount of time required to complete tests.

Recommendations

The Chief Medical Examiner and/or the Forensic Toxicologist (once reinstated) should:

VII.3.1 Revise the position description for the 2456 Assistant Forensic Toxicologist I position to provide a greater emphasis on the ability to complete toxicological tests, independently and familiarity with the equipment and instruments used in conducting such tests.

Costs/Benefits

There would be no costs involved in implementing this recommendation.

The benefits would include the hiring of staff who are better qualified to perform all the various analyses needed and to operate all the equipment utilized by the Toxicology Laboratory. This would reduce the amount of time required to complete toxicology examinations and would improve the reliability of results.

Appendix I: Glossary

This Glossary contains a listing of words and terms that will assist the reader in understanding the technical references in this audit report and information contained in appendices generated from Medical Examiner records and documents.

Accident	The manner of death ascribed when the death is the direct result of injuries sustained as the result of any type of accident, vehicular or otherwise, and there are no signs that the accident itself was deliberately caused by another (homicide) or the result of self-inflicted injury (suicide).
Airborne	A term used to identify matter, especially bacteria and viruses, that travel and typically, are transmitted through the air, or are released when solid substances, such as bone or tissue, are aerosolized.
Analgesics	A classification of drugs used to relieve or allay pain
Antipyretics	A classification of drugs used to control or prevent fever
Assay	A test to determine characteristics, or an analysis to determine the presence of one or more substances.
Autopsy	See Necropsy and Necropsy Report
Bloodborne	A term used to identify matter, especially bacteria and viruses, carried via, and typically transmitted parenterally (through blood and other body fluids).
Board Certified	A medical doctor, duly licensed and having passed a specialized battery of tests which certify that the doctor is proficient in that specialty. In the case of Forensic Pathology, the doctor must also become board certified in anatomic pathology prior to becoming eligible to sit for the certifying test for forensic pathology.
Board Eligible	A medical doctor, duly licensed and having completed the appropriate training and fellowships to be qualified to sit for a specialized test in a specific discipline of medicine to prove proficiency.
Calibrator	A constant comparison used to determine, correct or measure the results of an activity.
Cause of Death	The determination of the specific conditions that brought about the death of an individual.

Chain of Custody	A written record accounting for the disposition of evidence which shows (a) which individuals had possession of a particular piece of evidence at any given time; (b) how long such individuals had possession; and (c) at what point and to whom possession of the evidence was subsequently transferred.
Control	A regulating mechanism used to gauge the degree to which the level, or concentration of substances detected in an organic solution, in this case toxic substance, vary from an expected or accepted level.
Coroner	A public official whose chief duty is to investigate causes of death that are possibly not due to natural causes. In the State of California, a coroner is not required to hold any medical or scientific degrees or licenses.
Death Scene	The physical area and location where a death has occurred or where a body is discovered.
Drugs of Abuse	Chemical substances that are commonly misused and or illegally obtained and used for something other than their intended purpose. These substances can be illegal street drugs/narcotics such as cocaine, or prescription drugs/narcotics such as codeine.
DUI	Driving Under the Influence of alcohol or other controlled substances.
Forensic	Belonging to, used in or suitable for a court of law.
Forensic Examination	The analysis of the remains of the deceased to determine the cause of death and nature of death. This examination is generally conducted as an autopsy and/or an external examination.
Forensic Pathologist	A medical doctor specializing in the study of the essential nature, structure, function and characteristics of disease, and who operates in a medico-legal setting.
Gas Chromatography	The use of gas, as a carrier, to accomplish the separation of complex solutions into chemically distinct layers, for the purpose of identifying each substance found in the solution.

Histology	The branch of biology dealing with the study of tissues; the structure, especially the microscopic structure of organic tissue.
Homicide	The manner of death ascribed when the death is the result of an injury that was inflicted by another person (death at the hands of another).
Manner of Death	The mode in which an individual met their death. The four modes are: natural causes; accident; suicide; and at the hands of another, or homicide.
Medical Examiner	A public official who makes postmortem examinations of bodies to find the cause of death. In the State of California, a medical examiner must be a duly authorized and licensed physician and surgeon with a specialty in pathology.
Medical Examiner's Inquest	A formal proceeding, conducted as a result of a death, wherein the coroner, medical examiner, or another duly authorized person conducts an inquiry regarding the cause, manner and circumstances surrounding the death of an individual. Such proceedings are usually conducted when it is not clear how the death occurred, or if there is conflicting information regarding the circumstances or manner of death. Under California law, a coroner's inquest is a court proceeding, but it is not a court of law.
Metabolism	The sum of the process in the building up and breaking down of substances, or the processes by which a substance is handled in the body.
Metabolite	A substance essential to the metabolism of a particular organism or a product of metabolism.
Microorganism	A living being, such as a bacterium, too small to be seen by the unaided eye.
Natural	The manner of death ascribed to a case when there are no signs or evidence of accident, suicide or homicide. This is the manner of death ascribed even if the death is caused by the complications of a disease such as pneumonia, or AIDS, or conditions such as stroke or heart attack, resulting from cardiovascular disease.
Necropsy	A complete external and internal forensic examination of a body, that details the physical conditions found with regard to internal and external injuries, organ deterioration, disease, wounds, paths of injuries, etc.

Necropsy Report	Dictation prepared by the pathologist detailing the conditions encountered during the necropsy
Parenteral	A substance, generally a bacterium or virus, that enters the body by means other than through the digestive canal, such as the result of a needle stick or through sexual transmission.
Pathogen	A specific cause, such as a bacterium or virus, of disease.
Pathology	The study of the essential nature of disease; the abnormality of structural and functional characteristics of a disease.
Penal Code 11550	State statute which provides a protocol for the testing of an individual's bodily fluids to determine the existence and level of controlled substances (other than alcohol) in the body.
Serology	A science dealing with serums, such as blood and body fluids, and especially their reactions and properties.
Standard	A criterion set up as the rule or benchmark for measuring results or the model to be followed in conducting an activity.
Suicide	The manner of death ascribed when the death is the direct result of a self-inflicted injury.
Toxicology	A science that deals with poisons, and especially with problems of their use and control.
Toxicology Screen	A pre-determined set of tests, conducted as a group, on biological samples, to detect the presence of a specific chemical or drug and/or its metabolites, or to detect the presence of substances belonging to a specific family of drugs.
Universal Precautions	A set of behaviors and practices, originally adopted to protect surgical patients in hospitals, that are used to reduce, and often prevent the spread of disease. More recently, Universal Precautions have been developed as a set of behaviors and practices that are designed to reduce the risks, faced by medical and health workers, of spreading and contracting HIV.

Appendix II: Public Interaction Survey

As part of the management and performance audit of the Medical Examiner's Office, the Budget Analyst conducted a public interaction survey to assess the Medical Examiner Office's interaction with private companies and public agencies, as well as with the public at-large. The survey was designed to obtain qualitative information on whether Medical Examiner staff who interacted with the public were knowledgeable of general procedures and of policies for interacting with next of kin, especially in regards to meeting families cultural and religious needs.

Conducting the public interaction survey involved selecting 15 agencies and contacting those agencies by telephone. Of the agencies contacted, 13 responded to questions by phone or via fax. The 13 respondents included ten funeral homes, one hospice, and two public programs. Not responding to the survey was one funeral home and the Visiting Nurses of San Francisco.

All of the agencies chosen, with the exception of the Department of Public Health's AIDS Project, also interact with the public at-large. Because of their interaction with the Medical Examiner's Office and the public at-large, these agencies have the ability to observe the Medical Examiner Office's interaction with the public from a customer service perspective.

Individuals or families who have had interaction with the Medical Examiner's Office due to the death of a friend or family member were not contacted for this survey. The Budget Analyst's audit team concluded that direct communication with individuals or families may infringe upon their privacy, as well as cause them unnecessary personal hardship.

The ten funeral homes and the one hospice, which are located in San Francisco, were chosen randomly. The two public agencies were chosen specifically because of their ability to observe or receive feedback from the public regarding the Medical Examiner's interaction with the public. In summary, all 13 respondents stated that Medical Examiner staff had adequate knowledge of procedures. Although, one funeral home indicated that administrative staff who answer the telephone and interact with the public were not as well informed about procedures as the investigators. In addition, all 13 respondents indicated that the Medical Examiner's Office met families' cultural and religious needs, and 12 of the 13 respondents indicated they were satisfied with the performance of the Medical Examiner's Office.

However, three of the ten funeral directors (as noted by the asterisks) stated that they did not agree with the Medical Examiner's removal policy. The Medical Examiner's removal policy consists of charging funeral home $100 per removal of a deceased person and the funeral home is required to bring the check at the time the body is released. These three companies report that the M.E. Office does not inform the family of the removal fee and places this responsibility on the funeral director to communicate and collect the removal fee from the family. If the family doesn't pay the removal fee, the funeral directors are responsible for reimbursing the Medical Examiner's Office for the cost of the body removal.

According to the Administrative Coroner, the removal fee policy is communicated to funeral homes when they call in to report a case. The Administrative Coroner reports that the objective is to not burden the families with monetary issues when they come to the coroner's office. If a family is faced with a financial hardship, the family is encouraged to call the Medical Examiner's Office and the fee will be waived if financial hardship can be proven.

The following pages contain narrative responses to the question regarding the Investigators' sensitivity to religious and cultural needs of families, raw responses to the survey questions and a listing of the agencies surveyed.

Narrative responses from funeral directors to the question: "Are Medical Examiner personnel respectful of a family's cultural and religious needs?"

Neptune Society of Northern California
Ms. Kristine Anderson, Manager
"I've been very impressed with the [Medical Examiner] Office's response to different cultures. Herb Hawley will bend over backwards to get things done quickly, and he's very good at explaining procedures to families."

Sinai Memorial Chapel
Mr. Kaufman, Manager
"The Medical Examiner's staff bends over backwards to be respectful of both cultural and religious concerns. I do not recall any problems regarding this issue. Families that we have worked with have reported that deputies are very polite and sensitive. We think that the M.E. staff is highly professional."

Valente Marini Perata & Co.
Mr. Matthew Taylor, Manager
"I only remember one incident where a family mentioned that a deputy had been insensitive to their needs, but this is over many, many years."

California Funeral Services
Mr. Kevin Nichols, Owner
"I have not heard any complaints from families about interaction with the [Medical Examiner] staff's regarding cultural and religious concerns."

DPH, AIDS Project
Laura Hormel, Analyst
"I go to the MEO every Wednesday from 8 a.m. to 11:00 a.m. to gather data for the project. I sit in the front office and have been able to observe staff interact with families. I have never observed unprofessional or inappropriate interaction from staff with the families. Investigators understand protocol and procedures, and investigators seem very helpful and respectful to families."

"The only problem we have had with the department is related to administrative matters. The department does not follow through with obtaining or accessing work order funds."

Survey Questions

1. Does the _____ funeral home/agency interact with the San Francisco Medical Examiner's Office?

1a. If yes, how many removals per month?

2. What is the scope of the interaction with the M.E. Office?

3. Which staff personnel do you work with?

4. Are personnel knowledgeable of the procedures and/or legal requirements involved in the interaction?

5. Are personnel respectful of a family's cultural/religious needs?

5a. Describe your observation of M.E. personnel interacting with next of kin.

6. Did the office perform its work satisfactorily?

6a. Did the office meet your company's expectations?

Public Interaction Survey						
Company	No. of removals per month (avg.)	Personnel Interaction	Adequate knowledg of procedures	Meet families cultural/ Religious needs	Is the dept's. work satisfactory?	Did M.E. Office meet expectations
Bayview Mortuary	5	Admin. Cor./deputy	yes	yes	yes*	yes
Valente Marini Perata & Co.	5	deputy/admin.staff	deputy-yes admin-sometimes	yes	yes*	yes
Neptune Society	25	Admin.Cor./deputy	yes	yes	yes	yes
Anderson's Funeral Parlors	3	admin. staff/ autopsy techs	yes	yes	yes	yes
Daphne Funerals (responded by fax)	6	admin. staff/ autopsy techs/deputy	yes	yes	did not answer	yes
Sinai Memorial Chapel	3	deputy/admin. staff	yes	yes	yes	yes
California Funeral Services	1.3	deputy/autopsy techs	yes	yes	yes*	yes
Sullivan's	3	deputy/admin. staff	yes	yes	yes	yes
Hospice by the Bay	1.5	Coroner	yes	yes	yes	yes
McAvoy O'Hara Mortuary	1.0	deputy	yes	yes	yes	yes

(yes*)

Driscoll's	info not available	deputy/admin. staff	yes	yes	yes	yes	
Mortuary							
UCSF Willed-Body	3	admin coroner	yes	Program has not	yes	yes	
Program				received any complaints.			
DPH, AIDS Project	60	blood samples	pathologists/admin	yes	yes	yes	

Public Interaction Survey

California Funeral Service 647-3900 1465 Valencia Street, S.F.	Mr. Kevin Nichols, Owner
Anderson's Funeral Parlors 647-0150 1387 Valencia Street, S.F.	Mr. Alan Haley. Mgr.
Bayview Morturary 822-2820 5187 Third Street	Mr. James Leverett, Mgr.
Valente Marini Perata & Co Funeral Driectors 333-0161 4840 Mission	Mr. Matthew Taylor, Mgr.
Neptune Society of Northern California 771-0717 2740 Hyde Street	Ms. Kristine Anderson, Mgr.
Cathay Wah Sang 982-1213	Ms. Nikki Daphne, Owner
Washington Mortuary 648-4585 1641 LaSalle Ave	Mr. Washington, Owner **(Did not respond to survey)**
Mc Avoy O'Hara Co- Evergreen Mortuary 668-0077 4545 Geary Blvd.	Mr. Dan O'Hara, Owner
Driscoll's Mortuary Chapel 826-6300 1096 South VAn Ness Ave.	Mr. Andrew Spyrow, Manager
Sinai Memorial Chapel 921-3636 1501 Divisadero	Mr. Kaufman, Manager
Sullivan's 621-4567 2254 Market Street	Mr. Jim Sullivan, Co-Owner
Visiting Nurses of San Francisco 750-4404	Ms. Ellen Allan, Director **(Did not respond to survey)**
Hospice by the Bay 626-5900	Mr. Bob Osborne, Patient Care Coordinator
U.C.S.F.'s Willed Body Program 476-1981	Ms. Dori Tico, Curator
City of San Francisco Depart. of Public Health AIDS Project 554-2880	Julian Nari, Laura Hormel, Analysts

Appendix III: A Limited Survey of Medical Examiner's Offices in California and Selected Jurisdictions Across the United States

In order to assess the activities of the San Francisco Medical Examiner's Office, and compare those activities with similar operations, a limited survey of jurisdictions in California and across the United States was conducted. The limited survey consisted of: six jurisdictions in California (Alameda County, Los Angeles County, Marin County, San Diego County, Santa Clara County, and Ventura County); and five jurisdictions across the United States (Bexar County, Texas [San Antonio], Cook County, Illinois [Chicago], Hennepin County, Minnesota [St. Paul/Minneapolis], King County, Washington [Greater Metropolitan Seattle], and Milwaukee County, Wisconsin [Greater Metropolitan Milwaukee]. These jurisdictions were chosen, partly at the suggestion of the Chief medical Examiner for the City and County of San Francisco, and also because of the size of the metropolitan area served, the urban characteristics of the metropolitan area served, and the structure of the office (ME/Coroner, ME, Coroner, Sheriff/Coroner).

Based on population statistics for the areas surveyed, the number of deaths annually, the number of deaths reported to the Medical Examiner's Office and the number of deaths determined to be under the jurisdiction of the Medical Examiner, the statistics reported by San Francisco appear to be reasonable. The major differences, with regard to the jurisdictions outside of California, are:

- Organizational Structure;
- Responsibility for notification of the next of kin;
- Time needed to sign-out a case;
- The manner in which toxicology cases are handled; and
- Conducting Coroner/Medical Examiner Inquests.

The most comparable jurisdiction, with regard to the philosophy used to manage cases is King County, Washington. Despite its placement as a division of the Department of Public Health, the King County Medical Examiner's Office maintains strong alliances with local and County police agencies. King County is a jurisdiction that has a little more than twice the population of San Francisco, has slightly more than twice the number of deaths annually, and just under twice the number of cases reported to the Medical Examiner's Office on an annual basis. However, both King County, Washington and San Francisco have approximately the same number of cases under the Medical Examiner's jurisdiction on an annual basis.

As in San Francisco, the King County Medical Examiner's Office has a policy to conduct full autopsies if a dissection is warranted, and that all motor vehicle accidents, and suicides should be fully autopsied. Death investigations are handled

by the Medical Examiner's Investigation staff with accidents and homicide investigations conducted jointly by the Medical Examiner's Office and the Police.

The annual appropriation for FY 1995-96 for the King County Medical Examiner's Office was approximately $2.1 million. This level of appropriation is approximately $1.2 million less than the appropriation for the San Francisco Medical Examiner's Office during the same time period. However, the difference in appropriation levels can be attributed to the fact that the King County Medical Examiner's Office does not conduct any toxicology analysis in-house, has 10 fewer funded positions, and is not responsible for conducting inquests, or paying any costs associated with inquest proceedings.

The information gathered on each jurisdiction surveyed is included as part of this appendix. It provides interesting information for comparative purposes as well as insight into to vast differences in the organizational structure of medical examiner offices, reporting responsibilities and total processing time for cases.

Case #1

The first case involved the death of an individual as a result of methamphetamine poisoning. The cause of death was determined prior to convening the inquest. The Chief Medical Examiner's questions focused on obtaining information to help determine the circumstances and manner of the individual's death. Due to the high levels of methamphetamine found in the deceased, the Chief Medical Examiner was trying to determine whether the manner of death should be listed as a suicide, or an accident, or at the hands of another.

In total, three witnesses provided testimony regarding the psychological state of the deceased. The witnesses were characterized as a friend/counselor, an acquaintance, and a boyfriend.

The first witness, the friend/counselor, described a troubled person who, over a period of time, had become somewhat delusional and had begun to exhibit behaviors that would indicate the presence of some mental health issues. During testimony, the first witness indicated that the deceased appeared to show signs of depression. This witness also indicated that the deceased used illegal substances, specifically "crack" and "speed", and that "speed", or methamphetamine was the deceased's drug of choice.

The friend/counselor indicated that they referred the deceased to an emergency room on one occasion for depression and that the deceased was reportedly under psychiatric care. Even though the deceased evidenced signs of depression and was reportedly under psychiatric care, this witness indicated that suicide was never

mentioned and the deceased had never taken overdoses of medication with the intention of harming themselves.

The second witness, the acquaintance, indicated that they knew the deceased for a period of two or three months as a friend of the third witness. This witness also indicated that they saw the deceased daily, in passing, and only had extended conversations on a couple of occasions. This witness was not aware of any medical or psychiatric problems, or drug use by the deceased. However, this witness was in the same building when the deceased allegedly overdosed on methamphetamine. The building was described as a shared living space with one way to enter and exit the building. Therefore, for anyone to enter or exit, they had to pass by the area where the second witness lived.

The second witness indicated that the third witness told them to let the ambulance in when it arrived. The second witness did not recall if the third witness was in a hurry, or agitated, or upset. The second witness alleges letting the paramedics in, but not following them. The witness learned about an hour later that the deceased overdosed and was surprised. This witness did describe the deceased as moody and emotional, but not necessarily inappropriate or unreasonable. This witness was also not aware of any reasons, nor did they suspect that the deceased would intentionally end their life.

The third witness, the boyfriend, had known the deceased for approximately six months and had lived with the decedent for approximately three months. This witness did describe routine use of methamphetamine and indicated that the deceased had been a user prior to meeting them. The relationship was characterized as good and everything in the deceased's life was going well. All indications were that an intentional overdose would not have been something the deceased thought about or attempted. Finally, this witness vouched that no one else was on the premises and that he had no idea or understanding of the reasons for the deceased's actions.

This witness stated that they did not have large quantities of methamphetamine at their home, and that the deceased did not typically obtain the drug on their own. The witness described the events of the evening as unremarkable and indicated that things happened quickly with regard to the apparent overdose.

After hearing the testimony of the witness, and based on the facts of the case, the Medical Examiner determined the manner of death to be an accident.

Case #2

The second case involved the death of an individual from secobarbitol-and-morphine-type alkaloid poisoning. Again, the circumstances and manner of death

were at issue in this case. Also at issue in this case was whether or not the health care professional responsible for reporting the death knowingly omitted information from the attending physician and Medical Examiner's Office staff.

Two witnesses were called to provide testimony that would give the CME enough information to make some decisions regarding the circumstances and manner of death. One witness was characterized as a friend who was providing some level of home care for the deceased along with the witness's mother. The second witness was a health care worker responsible for monitoring the condition of the deceased, who was, at the time of his death, under hospice care.

The first witness, indicated that they had known the deceased for a period of five to six years and considered the person a friend and at times a confidant of the deceased. This witness was aware that the deceased was HIV positive and for the past several years exhibited progressive symptoms of the disease. The witness was aware of the recent hospitalization of the deceased and that at the time of death, was in hospice care.

The first witness also characterized the deceased as being able to move around their environment with assistance and being strong enough to sit, upright. The deceased had help with chores from the witness and from family members who had come to be of assistance. In the month prior to death, the deceased was described as lucid, able to follow conversations and able to remember things from the past. However, the deceased was characterized as extremely depressed and as having a long history of depression. The deceased had also told this witness that suicide was an option.

The second witness, indicated that they were a licensed healthcare worker in the State of California, and had been employed as such since 1993. This witness began working with the deceased approximately two weeks prior to their death. This witness also confirmed that individuals assigned to hospice support are generally thought to have approximately six months to live. The duties of the witness were to manage the patients' medications, monitor their condition and report any changes to the physician, and ensure the patient's comfort and safety.

This witness stated that they could not remember all of the medications that the deceased was on, but did recall the deceased self-administering morphine that had not been prescribed by the doctor. The deceased was again described as rational, lucid and interactive. The second witness stated that the deceased did not discuss suicide, nor did the deceased give the impression that they were stock-piling medication to commit suicide.

After hearing the testimony and based on the facts of the case, the Medical Examiner determines the manner of death to be suicide.

Limited Survey Tabulation

	Los Angeles County	San Diego County	Santa Clara County	Alameda County	Ventura County	Marin County
Organizational Information:						
Type of Office	Medical Examiner/Coroner	Medical Examiner	Medical Examiner/Coroner	Sheriff-Coroner	Medical Examiner/Coroner	Coroner
Place in Overall Organization	under CAO	under CAO	under County Executive	No answer	under Health Dept.	Separate elected office
Organizational Structure	3 bureaus: Administrative; Operations (investigative) & Forensic Labs headed by Director; plus Forensic Medicine section (headed by CME)	2 divisions: Operations (investigations; autopsy asst/evidence; support svcs) & Chief Deputy ME (autopsies; tox; histology)	3 divisions (clerical; autopsies & investigations) headed by admin coroner, who reports to CME & Asst MEs	No answer	Chief ME; Asst Chief ME; clerical, investigative and autopsy divisions	1 coroner; 1 Asst Coroner; 3 investigators; 2 clerical; 1 contract pathologist
Statistics:						
Population		2,700,000	1,500,000		670,000	230,000
No. of Deaths Annually	65,000	18,000	9,300	10,000	4,500	1,750
Mortality Rate per 1,000	#DIV/0!	6.67	6.20	#DIV/0!	6.72	7.61
No. of Deaths Reported to CME	19,000	8,400	3,000	3,500	2,500	1,200
% of Deaths	29.2%	46.7%	32.3%	35.0%	55.6%	68.6%
No. of Cases under CME's Jurisdiction	13,000	2,550	1,200	1,600	1,200	750
% of Deaths Reported	68.4%	30.4%	40.0%	45.7%	48.0%	62.5%
No. of Full Autopsies	4,500	1,760	1,000	1,200	450	300
% of CME cases	34.6%	69.0%	83.3%	75.0%	37.5%	40.0%
No. of Partial Autopsies	800	0	0	0	0	0
% of CME Cases	6.2%	0.0%	0.0%	0.0%	0.0%	0.0%
No. of External Examinations	5,000	770	200	Unknown	20	200
% of CME Cases	38.5%	manner of death; 30.2%	16.7%	N/A	1.7%	26.7%
Damographic Categories Used	Age, sex, race, ethnicity, zipcode, type of death	race; age; place of death; occupation; marital status	Records not maintained	location; manner of death; type of accident	sex; age; ethnicity; location	Records not maintained
# of Authorized Positions	247	46	21	27	9	8
# of Funded Positions	173	46	21	27	9	8
Annual appropriation	$12,000,000	$3,029,810	$1,805,000	$2,500,000	$1,070,000	$370,000
Investigations:						
Responsibility for Investigative Function	POST certified Coroner's Investigators	(formerly Deputy Coroners)	ME/Coroner Investigators	Deputy Coroner Peace Officers	Coroner/ME personnel	Coroner's Investigator

Limited Survey Tabulation

Training Requirements for Investigative Staff	Los Angeles County: POST Death Investigative Course and PC 832 training; must have AA/BS degree	San Diego County: 80 hour Deputy Coroner's course at Orange County Sheriff-Coroner's Office	Santa Clara County: HS diploma; 3 years experience in medical, nursing, medical examiner, coroner, investigative or law enforcement; field	Alameda County: Must meet POST requirements; 832 PC; 2 week death investigation course & entry level requirements	Ventura County: On-the-job training	Marin County: POST training; Mortuary College; OJT
Body Removal Services	In-house Forensic Attendants	by contract	by contract			
Homicides contaminated because investigators not properly trained	A few	No answer given	None	Unknown	Unknown	
Responsibility for Notification of Next of Kin	Coroner staff	Investigative staff; in person if possible	Investigators; in person or by phone	In person; by phone; other agency (in person)	In person by ME Investigator	In county-in person; out of county- other agency
No. of Investigative Staff	33 investigators (I & II); 20 Forensic Attendants	1 Chief Investigator; 14 Investigators	8 Investigators	3 supervising investigators; 12 investigators; 4 coroner aides	5 Investigators	3 investigators
Responsibility for Investigating Accidents/Homicides	Law enforcement-criminal aspects; coroner-death aspects	Investigators; MV accidents-Police Traffic Div; Homicides-Police Dept	ME Investigators	Criminal - Police; Death - Coroner	ME and Police	
Pathology:						
Time Needed to sign out case	24 hours for histology sign-out exams and 1 - 3 months for autopsied cases	Autopsy reports - 30 days; Toxicology 3 - 6 weeks	2 - 6 weeks	6 - 8 weeks	Hours to months; determined by ME	1 day - 2 weeks
Use of protocols for labs, etc.	Yes	Yes	Yes	Yes	No	Yes
Use of Universal Precautions	Yes	Yes	Yes	Yes	No	Some
Licensure Required	Pathologists are Board-certified in forensic pathology; physicians are State-licensed	State-licensed & Board-certified forensic pathologists; Forensic Autopsy Techs are licensed embalmers	None	None	None as a department	Coroner is licensed MD
Laws regarding Inquests	Inquests no longer performed	None conducted	No Inquests	Government Code	No Inquests	Very seldomly held
Pathologists called to accidents/homicides	Only if needed	Homicides-Yes	No	No, but may request one	No - discretionary	

Limited Survey Tabulation

	Los Angeles County	San Diego County	Santa Clara County	Alameda County	Ventura County	Marin County
Problems caused by not having pathologist at scene	No major problems	Very helpful to have pathologists at scene	None	Sometimes	Rarely	
Cases miscalled because pathologist not at scene	Occasionally	Unknown	None	None	None	
Do benefits of having pathologists on-call outweigh costs?	Not feasible to do this in LA	Yes	No	No	No extra cost for pathologists to be on-call	
Criteria for determining full or partial autopsy/external exam	Circumstances and exam findings	External exams-over 50 yrs old: past medical history sufficient for explanation & no trauma or suspicion; over 60: no trauma or suspicion, even without medical history	External exam: seen by physician in last 30 days & good medical history; attending physician not avail.;family objects to autopsy (incl. SIDS)	Medical history & circumstances	At discretion of Physician ME	Limited autopsy - by family request
determination?	Chief ME	Deputy ME	Pathologist	Pathologist	see above	Coroner/Asst Coroner
No. of Autopsy Staff	17 Physician Specialists; 3 Post Graduate Physicians; 16 Forensic Technicians (I & II); 1 Radiologic Technologist	1 ME; 1 Deputy CME; 4 Deputy ME; 1 Forensic Pathology Fellow; 1 Chief Autopsy Asst; 6 Forensic Autopsy Assts	4 pathologists; 4 forensic pathology technicians	Contracted out	2 Physician MEs; 1 autopsy assistant	Contracted out
Toxicology:						
Cost per year for toxicology analyses	$709,380	$625,108	$60,000	$110,000	None	
Minimum Qualifications of toxicologists	Entry level - Bachelor's Degree in Science and 3 semesters of quantitative analysis; Journeyman - Master's	BS in Chemistry or Certified Lab Technologist	N/A	N/A	N/A	N/A
Types of Screens	T (Traffic); H (Homicide); S (SIDS); C (Comprehensive); Extended C	Not provided	Auto; Homicide; Drug Overdose (illicit drugs); Drug Overdose (prescription drugs); Fetal Death; SIDS; Child Abuse; Work-related; High Profile/Police-Involved Deaths	Same as Santa Clara	Not provided	Not provided

Limited Survey Tabulation

	Los Angeles County	San Diego County	Santa Clara County	Alameda County	Ventura County	Marin County
Tox Screens ordered for external exams	Natural death - from nothing to C screen; ovardose - C screen	None routinely; occasional alcohol	Nothing routine	No answer	None	None
No. of Toxicology Staff	8 Senior Criminalists; 3 Evidence & Property Custodians	1 Tox Lab Mgr; 1 Supv. Toxicologist; 4 Toxicologists; 1 Lab Asst	Contract w/ IFS	Contract w/ IFS	Performed by Sheriff's Crime Lab	Contract w/ DOJ
Other Staff	12 Records/Subpoena/Medica l Support clerical positions	4 clerical; 1 MIS; 1 Administrator; 1 Admin Svcs Mgr; 1 Custodian; 2 student workers	1 Administrator; 2 clerical; 2 transcriptionists	3 clerks; 1 property clerk; 1 sergeant; 1 lieutenant; 2 medical transcribers	1 clerical	2 clerical

Limited Survey Tabulation

	Cook County	King County	Bexar County	Hennepin County	Milwaukee County
Organizational Information:					
Type of Office	Medical Examiner	Medical Examiner	Medical Examiner	Medical Examiner	Medical Examiner
Place in Overall Organization	under Bureau of Administration	Under Dept. of Public Health	Report to County Commissioners	Under County Administrator	Under County Executive/County Board
Organizational Structure	6 Divisions: X-ray/Histology/Consultants; Autopsies; Toxicology; Admin/ Investigations/ Medical Records; Photo/ Transcription; Autopsy Service/ Intake Desk	3 Divisions: Admin; Investigations/Autopsies (headed by PhD Chief Medical Investigator); Pathologists	5 Divisions: Investigative (7); Medical (5); Medical Support (7); Toxicology (6); Administrative/Clerical (8)	3 Divisions: Autopsies; Admin; Investigations	5 divisions: Pathology Services; Laboratory Services; Investigative Services; Autopsy Services; Administrative Services
Statistics:					
Population		1,613,600			968,200
No. of Deaths Annually	50,000	12,337	10,000	10,000	10,425
Mortality Rate per 1,000	#DIV/0!	7.65	#DIV/0!	#DIV/0!	10.77
No. of Deaths Reported to C/ME	18,000	5,864	7,000	3,300	5,308
% of Deaths	36.0%	47.5%	70.0%	33.0%	50.9%
No. of Cases under C/ME's Jurisdiction	12,000	1,504	2,000	1,575	3,109
% of Deaths Reported	66.7%	25.6%	28.6%	47.7%	58.6%
No. of Full Autopsies	4,000	1,118	1,300	700	1,109
% of C/ME Cases	33.3%	74.3%	65.0%	44.4%	35.7%
No. of Partial Autopsies	0	0	75	0	0
% of C/ME Cases	0.0%	0.0%	3.8%	0.0%	0.0%
No. of External Examinations	8,000	189	700	50	29
% of C/ME Cases	66.7%	12.6%	35.0%	3.2%	0.9%
Demographic Categories Used	Race, sex, age, cause, manner	Manner; Age; Gender; Race; Marital Status; Month; Location; Cause	Age, sex, race, cause of death, manner, day, time, year; circumstances	Name; Case #	Manner, cause; sex; age;race; marital status
# of Authorized Positions	110	27	34	25	34
# of Funded Positions	110	27	34	285	34
Annual appropriation	$7,000,000	$2,100,000	$2,068,925	$2,100,000	
Investigations:					
Responsibility for Investigative Function	ME Investigators	ME Investigators	ME Investigators	ME Investigators	ME Investigators

Limited Survey Tabulation

	Cook County	King County	Bexar County	Hennepin County	Milwaukee County	
Training Requirements for Investigative Staff	5 months in-house		In-house training for 3 months	40 quarter credits of biology, chemistry, criminal justice OR 2 years of forensic medical investigation experience for investigator; 20 quarter credits & 1 year morgue experience for invest. Asst		3 months on-scene training; monthly in-service training sessions
Body Removal Services	Police Department		Contracted out	In-house	Contracted out	
Homicides contaminated because investigators not properly trained						
Responsibility for Notification of Next of Kin	Police function		Police agency with jurisdiction	Chaplain; Police; ME personnel	Local Police Agency	
No. of Investigative Staff	1 Chief; 1 Asst Chief; 23 Investigators (I, II & III); 3 Investigator Aides	1 Chief Medical Investigator (PhD) &12 Investigators	7 Investigative staff	1 Invest Supv.; 8.2 Investigators; 5.4 Investigative Assts; 1 ME Tech	1 Investigative Coordinator; 12 Forensic Investigators	
Responsibility for Investigating Accidents/Homicides	Police/ME			Police/ME	Police/ME	
Pathology:						
Time Needed to sign out case	Usually within 24 hours		1 - 2 months	2 days to several weeks	3 - 6 days	
Use of protocols for labs, etc.	Yes		No answer	Yes	Yes	
Use of Universal Precautions	Yes		No	most	Yes	
Licensure Required	Doctors must be licensed in Illinois	Physicians licensed by State; Certified by NAME	None	ME & Asst MEs are licensed MDs; Inspected & certified by NAME	CME, Deputy CME & Asst. MEs are licensed physicians	
Laws regarding Inquests	No inquests	Inquests performed by County Executive Office, usually for in-custody deaths	No inquests	No inquests	ME does not conduct inquests; inquests are conducted by circuit court judge or cour commissioner & ordered by DA	
Pathologists called to accidents/homicides					On-call Pathologists	

Limited Survey Tabulation

	Cook County	King County	Bexar County	Hennepin County	Milwaukee County
Problems caused by not having pathologist at scene					
Cases miscalled because pathologist not at scene					
Do benefits of having pathologists on-call outweigh costs?					
Criteria for determining full or partial autopsy/external exam	Very few partial autopsies	Full autopsy on all traffic, homicides & most suicides; external on suicides (e.g. hanging), heart attack or if family objection	Partial autopsy on gunshot wounds of the head and unquestionable suicides	No partial autopsies	External exam - suicide w/ note; passengers in MV accidents; non-criminal deaths
determination?		CME			Pathologist
No. of Autopsy Staff	1 Chief Radiologist; 1 X-Ray Tech; 1 Chief Technologist & 2 Medical Lab Techs (Histology); 5 consultants; 11 Asst Medical Examiners; 1 Pathology Resident; 1 Chief Autopsy Tech; 1 Asst Chief Autopsy Tech; 10 Autopsy Techs; 3 Photogs (1 Chief)	2 Assoc. MEs; 2 Asst MEs; 1 Pathology Asst; 4 Autopsy Asst; 1 Medicolegal Coordinator	5 Medical; 7 Medical Support; Contract out histology	1 Asst CME; 1 Assoc. Physician; 1 Sr Assoc. Physician; 1 Forensic Fellos; Pathology testing contracted out	1 Deputy CME; 3 Asst MEs; 2 Forensic Fellows; 4 consultants; 4 Forensic Assts; Histology & Radiology contracted out
Toxicology:					
Cost per year for toxicology analyses	Criminal cases done by State Police; ME cases by ME				
Minimum Qualifications of toxicologists		N/A		N/A	
Types of Screens	Not provided				Alcohol, CO, etc.

Limited Survey Tabulation

	Cook County	King County	Bexar County	Hennepin County	Milwaukee County
Tox Screens ordered for external exams	Whatever the doctor wants	Suicides where manner of death clear - will run toxicology tests & do external exam	Same as for autopsies	Ordered on a case-by-case basis	CO, alcohol
No. of Toxicology Staff	1 Chief; 1 Asst Chief; 9 Toxicologists (I, II, & III); 3 Medical Lab Techs; 1 Lab Asst	Contract w/ State Tox Lab	6 Toxicology staff; Chief ME is also director of Crime Lab for Bexar Co. and City of San Antonio	Contracted out	1 Forensic Lab Technical Director 1 Scientific Director 3 Forensic Chemists; physical evidence testing by State Crime Lab
Other Staff	1 CME; 2 Asst CME;1 Executive Director; 1 Business Mgr; 5 Admin Asists; 1 Medical Record Librarian; 2 Property Custodians; 1 Telephone Operator; 3 Transcribers (1 Supv); 11 Lab Attendants; 11 Clerical	1 CME; 1 Admin Asst; 2 Office Techs (II & III); 1 LAN Administrator	8 Admin/Clerical staff	1 CME; 1 Admin Svc. Supv.; 1 Sr. Med. Secretary; 1 Principal Office Specialist; 3.5 Office Specialists; 1 Medical Transcriber	1 ME; 1 Admin Manager; 3 clerical; 1 transcriber; 1 Office Systems Coordinator; 1 consultant

Appendix IV: Inquests

This appendix contains details from the two inquests observed by the Budget Analyst's staff. This information is based on the observations and interpretations of the staff present as well as information contained in the transcripts from the inquests. This information is provided to give context for the conclusions and recommendations of the Budget Analyst. The information is not intended to characterize any participants, Medical Examiner's staff or witnesses, negatively or positively, nor is the information intended to assert any culpability.

Case #1

The first case involved the death of an individual as a result of methamphetamine poisoning. The cause of death was determined prior to convening the inquest. The Chief Medical Examiner's questions focused on obtaining information to help determine the circumstances and manner of the individual's death. Due to the high levels of methamphetamine found in the deceased, the Chief Medical Examiner was trying to determine whether the manner of death should be listed as a suicide, or an accident, or at the hands of another.

In total, three witnesses provided testimony regarding the psychological state of the deceased. The witnesses were characterized as a friend/counselor, an acquaintance, and a boyfriend.

The first witness, the friend/counselor, described a troubled person who, over a period of time, had become somewhat delusional and had begun to exhibit behaviors that would indicate the presence of some mental health issues. During their testimony, the first witness did indicate that the deceased did appear to show signs of depression. This witness also indicated that the deceased used illegal substances, specifically "crack" and "speed", and that "speed", or methamphetamine was the deceased's drug of choice.

The friend/counselor indicated that they referred the deceased to an emergency room on one occasion for depression and that the deceased was reportedly under psychiatric care. Even though the deceased evidenced signs of depression and was reportedly under psychiatric care, This witness indicated that suicide was never mentioned and the deceased had never taken overdoses of medication with the intention of harming themselves.

The second witness, the acquaintance, indicated that they knew the deceased for a period of two or three months as a friend of the third witness. This witness also indicated that they saw the deceased daily, in passing, and only had extended conversations on a couple of occasions. This witness was not aware of any medical or psychiatric problems, or drug use by the deceased. However, this witness was in the same building when the deceased allegedly overdosed on methamphetamine. The building was described as a shared living space with one way to enter and exit the building. Therefore, for anyone to enter or exit, they had to pass by the area where the second witness lived.

The second witness indicated that the third witness told them to let the ambulance in when it arrived. The second witness did not recall if the third witness was in a hurry, or agitated, or upset. The second witness alleges letting the paramedics, in, but not following them. The witness learned about an hour later that the deceased overdosed and was surprised. This witness did not describe the deceased as moody and emotional, but not necessarily inappropriate or unreasonable. This witness was also not aware of any reasons, nor did they suspect that the deceased would intentionally end their life.

The third witness, the boyfriend, had known the deceased for approximately six months and had lived with them for approximately three months. This witness did describe routine use of methamphetamine and indicated that the deceased had been a user prior to meeting them. The relationship was characterized as good and everything in the deceased's life was going well. All indications were that an intentional overdose would not have been something the deceased thought about or attempted. Finally, this witness vouched that no one else was on the premises and that he had no idea or understanding of the reasons for the deceased's actions.

This witness states that they did not have large quantities of methamphetamine at their home, and that the deceased did not typically obtain the drug on their own. The witness described the events of the evening as unremarkable and indicated that things happened quickly with regard to the apparent overdose.

After hearing the testimony of the witness, and based on the facts of the case, the Medical Examiner determined the manner of death to be an accident.

Case #2

The second case involved the death of an individual from secobarbitol-and-morphine-type alkaloid poisoning. Again, the circumstances and manner of death were at issue in this case. Also at issue in this case was whether or not the health care professional responsible for reporting the death knowingly omitted information from the attending physician and Medical Examiner's Office staff.

Two witnesses were called to provide testimony that would give the CME enough information to make some decisions regarding the circumstances and manner of death. One witness was characterized as a friend who was providing some level of home care for the deceased along with the witness's mother. The second witness was a health care worker responsible for monitoring the condition of the deceased, who was, at the time of death, under hospice care.

The first witness, indicated that they had known the deceased for a period of five to six years and considered the person a friend and at times a confidant of the deceased. This witness was aware that the deceased was HIV positive and for the past several years exhibited progressive symptoms of the disease. The witness was aware of the

recent hospitalization of the deceased and that at the time of death, was in hospice care.

The first witness also characterized the deceased as being able to move around their environment with assistance and being strong enough to sit, upright. The deceased had help with chores from the witness and from family members who had come to be of assistance. In the month prior to death, the deceased was described as lucid, able to follow conversation and able to remember things from the past. However, the deceased was characterized as extremely depressed and as having a long history of depression. The deceased had also told this witness that suicide was an option.

The second witness, indicated that they were a licensed healthcare worker in the State of California, and had been employed as such since 1993. This witness began working with the deceased approximately two weeks prior to their death. This witness also confirmed that individuals assigned to hospice support are generally thought to have approximately six months to live. The duties of the witness were to manage the patients' medications, monitor their condition and report any changes to the physician, and ensure the patient's comfort and safety.

This witness stated that they could not remember all of the medications that the deceased was on, but did recall the deceased self-administering morphine that had not been prescribed by the doctor. The deceased was again described as rational, lucid and interactive. The second witness stated that the deceased did not discuss suicide, nor did the deceased give the impression that they were stock-piling medication to commit suicide.

After hearing the testimony and based on the facts of the case, the Medical Examiner determined the manner of death to be suicide.

DEPARTMENT OF
ADMINISTRATIVE SERVICES

WILLIE L. BROWN, JR.
MAYOR

STEVEN D. NELSON
DIRECTOR

April 11, 1997

Mr. Harvey Rose
Board of Supervisor's Budget Analyst
1390 Market Street
San Francisco, CA 94102

Dear Mr. Rose:

Please find attached a copy of the response to the management audit that your Office has presented.

With the corrections noted in our response, we thank the Budget Analyst and his staff for their work and will work to implement the recommendations as appropriate.

Section I: Testing of Employees for Communicable Diseases

The OSHA Standard And The Medical Examiner's Office's Baseline Testing Program.

No Medical Examiner's Office employee has ever been required, at any time, to submit to any medical procedure at the behest of the Medical Examiner's Office, either on-site or elsewhere. The OSHA Bloodborne Pathogen Standard requires the Office to "make [hepatitis B] vaccination available at no cost, and at a reasonable time and place, to all employees who have potential exposure." Because it poses a substantial health risk to administer the hepatitis B vaccine to anyone who already has an immune reaction to hepatitis, we are therefore practically required to also make available hepatitis B screening. To be in compliance with the Standard, we must (and do) maintain records of those employees who have been vaccinated. If an employee declines to be vaccinated, we must (and do) require the employee to sign a form reflecting his or her decision. To collect the baseline blood sample for antibody testing, and, if appropriate medically, give the series of three shots over six months would take a minimum of four clinic or office visits. Performing the procedure on site saves employee time, increases productivity, and provides coordinated disease surveillance.

The Chief Medical Examiner recommends that office employees be periodically tested for other airborne and bloodborne pathogens to which they might be exposed while on the

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job. These include other forms of hepatitis, tuberculosis, influenza, tetanus, and HIV. Your report correctly points out that the coroner's offices in most of the other jurisdictions your team surveyed do not offer such testing and vaccination; however, you fail to note that all or nearly all of those other jurisdictions do not even have a medical examiner's office, but instead operate a simple county coroner's office. A county coroner is not a trained physician. Thus, the other jurisdictions you surveyed do not offer such services because they do not have the medical facilities or personnel trained to do so.

Although we never require our employees to be tested, we strongly encourage them to do so because screening serves three important functions. First, any positive test results would give the Medical Examiner an "early warning" of possible contamination problems within the office. This would allow the Medical Examiner to detect and eliminate the source of the contamination before more employees or members of the public become infected. Second, even in the case of an isolated incident of infection, early detection of a disease can stop or at least reduce the spread of, and potential damage caused by, the disease -- to the obvious benefit of our employees, their families, and the members of the public who have contact with the Office. Third, testing establishes a "baseline" for our employees; should they later become infected by one of the diseases we have tested for, this baseline will help them pursue a worker's compensation claim. Without a baseline, the infected employee might have considerable difficulty proving that they were not already infected prior to coming to work for the office, and as a result their worker's compensation claim could be denied outright.

Because of these substantial benefits, we endeavor to make on-site testing and vaccinations available to our staff for four reasons. First, if on-site testing is not provided, fewer employees will elect to be tested, simply because doing so would be inconvenient for them. This would be to their (and our, and the public's) detriment. Second, to the extent employees get tested off-site, we lose considerable employee time. On-site testing takes only a few minutes, but off-site testing typically consumes up to one-third of a working day. Third, for those pathogens for which vaccinations exist, vaccinations can help to keep our staff healthy, thereby avoiding sick time (and saving the taxpayers money). Fourth, we have been informed that some of our employees would prefer not to be tested for HIV (and possibly for some other pathogens as well) by their regular healthcare providers because they are concerned that the mere fact they have asked to be tested might be disclosed to an insurance carrier and ultimately used to deny them coverage. We do not know whether this in fact happens, but the perception exists that it does, which creates a disincentive for HIV testing. On-site testing at the Medical Examiner's Office is one of the few ways in which an employee can be tested for HIV with absolute confidence that not only the test results themselves but the fact that the test was administered will be kept rigorously confidential. (As we repeatedly explained to members of the audit team, absent a court order or voluntary disclosure by the employee, this information -- both the test results and the fact that the tests were administered -- is

never made public to anyone, ever, under any circumstances.) We note that the obvious purpose of the Government Code sections cited in the report -- and particularly of section 120980, which prohibits the unauthorized disclosure of anyone's HIV test results to any third party, and which is the only section in the chapter which exposes a violator to possible civil damages -- is to achieve precisely this same purpose, by protecting people who might be perceived to be members of "high risk" groups from being denied access to affordable medical and life insurance coverage. Thus, if we were ordered to no longer provide this service to our employees, one of the chief objectives of Government Code sections 120875 et seq. would be compromised.

The reference to the two employees who have elected to take some legal or other action is, at best, misrepresented. That the first case, the law suit, was thrown out of court as not having merit suggests strongly that the facts implied in this report are not complete or factual. It is noteworthy that the City has been awarded its costs in defending this action. Since the EEOC investigation just began, it would appear premature to suggest that it or the court appeal are likely to be successful.

Informed Consent Procedures. Recommendations I.1, I.3 and I.4. of the report contain supposedly "new" or "different" procedures to ensure that employees requesting on-site tests or vaccinations are informed of the risks associated with the various vaccinations and sign appropriate consent and waiver forms. In fact, as we explained to the auditors, in early 1995 we discussed with the City Attorney our informed consent procedures and made a number of revisions to them in order to ensure that all of our employees who request on-site testing or vaccination of any kind sign the appropriate consent forms. Currently no medical test or vaccination other than tuberculosis can be administered at the Medical Examiner's Office unless the employee who requests the test or vaccination signs an appropriate consent form, and this has been the case for the past two years. The Medical Examiner's Office has had consent forms for HIV and other testing since the referenced law went into effect. However, we welcome your review of our informed consent procedures to make sure that they are still in compliance with all of the latest applicable codes, standards and guidelines. We will ensure that our existing policies and procedures are closely followed and that all written consent forms are placed in a secure file.

II. Sanitary Conditions and the Use of Universal Precautions

This office has been continuously accredited by NAME for over 20 years, and this includes site visits by knowledgeable inspectors. The Medical Examiner's staff believe the cleanliness of the morgue exceeds requirements. We share the Budget Analyst's concern that the autopsy area needs to be clean at all times and have always strived to be sure that is the case. As it states in the report, the Budget Analyst's report was based on one initial observation which occurred when they asked to see the refrigeration units that were going to be replaced. The autopsy area was still active with 10 autopsies having

been done on that day, and only one autopsy technician was on duty. The autopsy technician was cleaning as rapidly as possible and had the entire area clean and sanitary by the time she left for the evening. The Budget Analysts were asked to come back to reinspect the autopsy area multiple times but declined to do so.

We disagree with the Budget Analyst about the scientific difference between sterilization, disinfection, and decontamination. Routine sterilization is not standard or warranted in autopsy cases.

There is a significant difference between regulated waste and unregulated waste according to law. We believe that the Budget Analyst has misunderstood this difference. According to federal OSHA, regulated waste is defined as follows:

> "Regulated waste means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials."

Regulated waste is to be discarded in red biohazard bags according to a specific protocol. Unregulated waste is anything other than that defined as regulated waste. It is disposed of as ordinary waste.

The Forensic Laboratory Manager has carefully researched this issue, and the policies and procedures of the department fully comply with the applicable regulations. The Medical Examiner's Office developed and implemented the regulated medical waste protocol years ago and meets all regulatory requirements. Records go back to its inception in July 1992 showing that all requirements have been met. Prior to January 1997 the Medical Examiner's Office's autopsy and laboratory specimens were interred in the same manner as human remains. Since January 1997 specimens are now defined to be medical waste and will be handled in accordance with applicable regulations.

Regarding personal protective equipment, the Bloodborne Pathogen Standard [(Sections (d)(3)(ix)(D)(4)(ii), (d)(3)(x), (d)(3)(xi), and (d)(3)(xii)] indicate that the employee is the one to judge when contamination might occur and what degree can be reasonably anticipated in determining what protective equipment to wear. The San Francisco Medical Examiner's Office provides numerous types of this equipment to its employees, allowing them to select the specific type that they prefer to use in a potential exposure situation. For example, they provide various types of face shields (chin length, disposable lightweight, or chin length, reusable, ratchet-type, or wraparound (1/2 length)

attached to a surgical-type mask), as well as other types of eye protection (goggles, glasses) which are to be worn with surgical masks. Each person may choose which type is most comfortable and provides them the degree of protection that they think appropriate for the degree of exposure anticipated. Although it is stated that employees do not wear this protective equipment during all procedures, no specific examples were provided to allow the Medical Examiner's Office to investigate a specific allegation. It must be kept in mind, however, that each employee has the freedom to select the appropriate protective equipment to wear depending upon the procedure that they are involved with and with their best estimate of the exposure that they anticipate. To a casual observer, it might appear that an employee is not properly protected; however, the procedure being conducted may require a much lower degree of protection than another procedure being conducted in a nearby work area.

If there are instances where the Budget Analyst noted that universal precautions and established procedures were not being observed, the Department would appreciate being informed as to the specifics. Nevertheless, the Department will ensure that established procedures for universal precautions using the appropriate protective equipment are followed.

The Budget Analyst has expressed great concern over the fact that the Medical Examiner's Office disinfects and reuses disposable needles and syringes in the autopsy room. The Office's policy of reusing disposable needles is designed to save the taxpayers' money. It is based on years of experience, and it is fully consistent with current industry standards. The purpose behind disposable needles is not to protect the healthcare workers in the event of a needle stick (an extremely rare event, and one which is equally likely to occur with a "used" disposable or non-disposable needle), but instead to protect the patient against potential infection from an inadequately sterilized needle. In the autopsy room, of course, our "patients" are dead; thus, infection of a deceased individual is not an issue. Abandoning this practice would cost the taxpayers over $10,000 per year (increased needle costs and increased hazardous waste disposal costs) and would achieve no practical purpose. We have pointed out to the Budget Analyst that the Federal OSHA Bloodborne Pathogen Standard does not prohibit the recycling of disposable needles used on the deceased. We are aware of no other potentially applicable regulation that does, and the Budget Analyst's audit team has not identified any. We have also checked with other medical examiners in California and elsewhere who tell us that they, too, recycle disposable needles and syringes and have been doing so for years.

If the Budget Analyst continues to be concerned about the Medical Examiner's Office's use of this widely-accepted practice, we propose to the Board of Supervisors that the Medical Examiner's Office host a roundtable meeting with the qualified staffs of other medical examiner's offices and selected hospitals to discuss this issue and attempt to reach an educated decision about it. These findings would then be reviewed with

applicable regulatory agencies to ensure compliance. We feel this would be wiser than simply embarking upon a plan that would cost San Francisco's taxpayers tens of thousands of dollars per year and increase the flow of hazardous waste while doing little or nothing to mitigate the inherent dangers associated with sharps use.

A written cleaning protocol has existed since July 1992 which is followed by the staff and is monitored by spot inspections by the management staff. This protocol is consistent with the variable workload of the division. The Medical Examiner's Office will ensure that this protocol continues to be followed.

III. Toxicology

The Medical Examiner's Office is accredited by the National Association of Medical Examiners (NAME) which accredits the entire operation, including Toxicology. We believe that the Medical Examiner's Office is in compliance with all of the guidelines set forth by NAME. By law forensic laboratories are exempt from regulation with the sole exception of forensic alcohol analysis.

The decision to reinstate a certified forensic toxicologist position is dictated by the availability of budget funds. The Medical Examiner's Office would welcome funding for a qualified forensic toxicologist, board certified by the American Academy of Forensic Toxicology and experienced in human forensic toxicology. This position would have to be a dedicated, full time position to allow for court appearances and preparation of protocols for improved methodology and training. At this time the Chief Medical Examiner is fulfilling these functions.

The Forensic Laboratory Manager position was developed to be a full time manager for the labs who manages business, technical and safety compliance for all Medical Services. The Medical Examiner strongly disagrees with the assertion that "the Laboratory Manager is being underutilized." The incumbent in that position performs all the duties in that job description, and had to absorb many of the duties of the 1844 Management Assistant position prior to the establishment of the 1368 Special Assistant position which is taking on those responsibilities. The Controller's Office has stated that one person cannot order items and then arrange payment for them. As a result, it has become the Laboratory Manager's responsibility for the ordering, and the Special Assistant's responsibility for paying the bills in compliance with the recommendations of the Controller's Office following an audit of the Medical Examiner's Office's fiscal procedures in 1996.

With respect to the Budget Analyst's recommendations concerning staffing and workload, the Medical Examiner's Office disagrees with the Budget Analyst regarding

workload distribution. The Assistant Toxicologist II position performs one step in the analysis of a majority of the Medical Examiner's cases; however, this is only one step out of many required to complete an analysis. The other steps are performed by the other toxicologists.

Since becoming responsible for the lab, the Chief Medical Examiner has initiated cross-training for all personnel in equipment and procedures. The Chief Medical Examiner spends a minimum of 10 to 20 hours per week in the Toxicology Laboratory overseeing its operations, tending to equipment maintenance, and developing manuals as required. While some of these hours are at nights and on weekends, a great deal of the time the Chief Medical Examiner spends in Toxicology is in the early morning hours. Since the majority of the employees in Toxicology work flex time and begin work before regular business hours, this affords the Chief Medical Examiner the opportunity to provide the level of supervisory and administrative oversight required for the efficient functioning of the lab. All of the suggested improvements have already been initiated by the Chief Medical Examiner.

It is not true that chain of possession procedures have been compromised. Chain of possession procedures are constantly reviewed and have withstood the scrutiny of criminal and civil trials for over 25 years. Chain of possession typically begins prior to evidence being under the Medical Examiner's jurisdiction.

There is a considerable difference between quality assurance, quality control, and proficiency testing. The results from our Toxicology Lab are often retested and confirmed by other labs and are commonly confirmed.

IV. Planning and Budget

Even though the Medical Examiner's Office's staffing has been in flux over the last several years due to budgetary constraints, we believe that the Office has adequately met the budget requirements. We have routinely responded to all demands for budget information. The Office has managed to keep expenditures within budget while meeting all of its core functions.

However, the Department recognizes and accepts the Budget Analyst's recommendations and will take all steps necessary to implement the recommendations in a timely fashion.

V. Medical Examiner's Inquests

The Department notes that the Medical Examiner always notifies appropriate agencies of inquests which may be of interest to them. The Department will continue to make notification a formal policy in the future.

According to an article in the *Journal of Forensic Sciences*, Vol. 34:3, May 1989, p. 638, by Robert Litman, M.D., "the psychological autopsy is a procedure for evaluating after death what was on the victim's mind before death." He also states that information in this area "is gathered from personal documents, from records such as police, medical, and Coroner's files, and from interviews with family, friends, work, and school associates, and physicians." Our staff reports that psychological autopsies, as described by Litman, are in fact commonly performed by the Chief Medical Examiner and his staff in determination of the cause and manner of death.

The Chief Medical Examiner is a licensed physician, board certified in several specialties, with over 25 years' experience and special training in the determination of cause and manner of death. According to Section 27491 of the California Government Code, it is the duty of the coroner to determine the cause, circumstances, and manner of death. The inquest allows for the gathering of information that cannot be obtained in a psychological autopsy. Regardless of the method used, the final decision as to cause and manner is still the decision of the Chief Medical Examiner.

VI. Organization

The Mayor last year confirmed the organization of the Department of Administrative Services which includes the entire operations of the Purchaser, the County Clerk, the Department of Elections, Convention Facilities, Real Estate, Animal Care and Control, as well as the Medical Examiner and the Public Administrator/Public Guardian (PA/PG). Since the Medical Examiner and the PA/PG Offices fall under the management of the Department of Administrative Services, any organizational change can be easily accomplished administratively. While I believe the recommendations to combine certain operations of the Medical Examiner's Office with the PA/PG have merit, I reserve the right to further study the reorganization recommendations with my staff and in the context of all the programs now under Administrative Services.

I will take the audit recommendation into consideration and in consultation with the Mayor will make any changes we feel are appropriate.

The Medical Examiner is very concerned about certain assertions in this section. The passage regarding the property control audit by the Controller does not mention that the

Controller found that with the new safeguards in place, the Medical Examiner's property and revenue money control was appropriate.

VII.1 Staff and Training: Pathology

Four out of five forensic pathologists are board certified or board eligible. The fifth staff member is verifying eligibility at this time. One staff forensic pathologist has been trained in X-ray use for many years, and one is partly trained.

The staffing level is supported by the National Association of Medical Examiners. For accreditation the Medical Examiner's Office requires five full-time forensic pathologists in order to re-establish the training program and to handle the workload. We know from experience that three forensic pathologists are insufficient for our workload.

A review of the data shows that the comparison of the numbers of cases per position per year between the various departments around the country is not valid. We have contacted the Chiefs of several of the referenced jurisdictions and found that the Budget Analyst counted every death reported to them as a case without differentiating jurisdictional and non-jurisdictional cases. If the same method were applied in San Francisco, each pathologist would have handled approximately 1,000 cases per year, not 320. The Department will review the Forensic Pathologist job description in conjunction with the Department of Human Resources and will make changes as appropriate.

VII.2 Staff and Training: Investigations

The Department disagrees with the Budget Analyst's recommendation to reduce the number of Medical Examiner's Investigator positions by one. The Medical Examiner has experience with working with one less deputy and has found that it is not practical because it increases overtime costs. The Paramedic Division agreed to answer the Medical Examiner's phones on the midnight shift for a maximum of five hours per night when the police found it to be too time-consuming for their dispatchers. The paramedics agreed to this because the period from midnight to 5 a.m. is their and the Medical Examiner's slowest time. The Chief Medical Examiner and Administrative Coroner are usually at work by 5 a.m. or shortly thereafter and can answer the phones at that time if the investigators are on a call. It would not be fair to ask the paramedics to answer the phones from 4 p.m. until 8 a.m. every night, since the phones are typically extremely busy during the 4 p.m. to 12 midnight shift for both the paramedics and the Medical Examiner. Also, the paramedics have no access to any records in the Medical Examiner's Office, meaning that they cannot furnish information to anyone, including grieving families calling for information regarding a deceased person. The Paramedic Division will soon become part of the Fire Department, and following this change, there are no guarantees that the Medical Examiner's Office will have the assistance of the Paramedic Division for answering phones.

The Medical Examiner's Office has previously requested the Department of Human Resources to create a new classification for the as-needed Investigators so that when these persons are used to fill in for full-time Investigators, they are paid an entry level salary rather than the same as the full-time permanent Investigators.

The Medical Examiner's Office already has in place a plan for training of Investigators, and all full-time permanent Investigators have received training in the suggested areas and more. Since our investigators have received Peace Officer Specialized Training (P.O.S.T.) certification, this training can be paid entirely from the P.O.S.T. funds at no cost to the citizens of San Francisco.

VII.3 Staff and Training: Toxicology

The Budget Analyst has either misinterpreted or been misinformed about the division of labor in the Toxicology Laboratory. Identification and quantitation of a drug involves numerous steps performed by different toxicology staff members. The staff is continuously undergoing training. All forensic toxicology staff have baccalaureate or advanced degrees. All have over 17 years' experience in human and forensic toxicology.

The Chief Medical Examiner is board certified in clinical and forensic pathology with over 15 years' experience as the medical director of an acute toxicology laboratory and over 25 years in forensic toxicology.

Based on review of the SOFT membership requirements, all Toxicology personnel would be eligible for full SOFT membership. Using SOFT guidelines, not only the Forensic Laboratory Manager, but also the Chief Medical Examiner and the Assistant Toxicologist II all meet SOFT requirements for the director of the laboratory.

However, the Medical Examiner's Office will review all laboratory job descriptions in conjunction with the Department of Human Resources.

Please feel free to contact me directly to discuss the report and/or our response.

Sincerely,

FOR - Steven Nelson
Director of Administrative Services

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